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The impact of water law upon allocation and use of waters within the Western United States is currently recognized as one of the major constraints to adaptation by irrigated agriculture of more efficient operation practices. This project provides a background of the law and evaluation of the potentials through water law interpretations or changes to implementing improved water management technology. Specifically, this report provides a synthesis of water laws of each of the 17 western states, as well as providing a state-by-state account of the water quantity laws, paying particular attention to features in the laws and their administration that direct the manner of use and provide incentives or disincentives to more efficient use.

General recommendations are offered that will permit or induce more efficient and effective water management. Specific recommendations identify areas requiring additional research to renovate state water laws consistent with present and prospective policies and needs.

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WESTERN WATER LAWS
AND
IRRIGATION RETURN FLOW

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FOREWORD

The Environmental Protection Agency was established to coordinate administration of the major Federal programs designed to protect the quality of our environment.

An important part of the Agency's effort involves the search for information about environmental problems, management techniques and new technologies through which optimum use of the nation's land and water resources can be assured and the threat pollution poses to the welfare of the American people can be minimized.

EPA's Office of Research and Development conducts this search through a nationwide network of research facilities.

As one of these facilities, the Robert S. Kerr Environmental Research Laboratory is responsible for the management of programs to: (a) investigate the nature, transport, fate and management of pollutants in groundwater; (b) develop and demonstrate methods for treating wastewaters with soil and other natural systems; (c) develop and demonstrate pollution control technologies for irrigation return flows, (d) develop and demonstrate pollution control technologies for animal production wastes; (e) develop and demonstrate technologies to prevent, control or abate pollution from the petroleum refining and petrochemical industries, and (f) develop and demonstrate technologies to manage pollution resulting from combinations of industrial wastewaters or industrial/municipal wastewaters.

This report is a contribution to the Agency's overall effort in fulfilling its mission to improve and protect the nation's environment for the benefit of the American public.

William C. Galegar

William C. Galegar, Director
Robert S. Kerr Environmental
Research Laboratory

PREFACE

This report is a companion study to a project and report entitled Achieving Irrigation Return Flow Quality Control Through Improved Legal Systems, by G. Radosevich and G. Skogerboe. While the report concentrates on a definition and explanation of the laws for water allocation and distribution in the seventeen western states, the companion study carries the dialogue further into an examination of the water quality laws of the western states and to what extent these two legal systems (quantity and quality control) interface. The latter report also explores the integration of legal controls with physical/technical realities.

It is suggested that the interested reader refer to both reports for a total picture of western water laws (quantity and quality), water administration and potential legal/technical solutions to the irrigation return flow quality control issue in the West.

G. Radosevich

ABSTRACT

The impact of water law upon allocation and use of waters within the western United States is currently recognized as one of the major constraints to adaptation by irrigated agriculture of more efficient operation practices. This project provides a background of the law and evaluation of the potentials through water law interpretations or changes to implementing improved water management technology. Specifically, this report provides a synthesis of water laws of each of the seventeen western states, as well as providing a state-by-state account of the water quantity laws, paying particular attention to features in the laws and their administration that direct the manner of use and provide incentives or disincentives to more efficient use.

General recommendations are offered that will permit or induce more efficient and effective water management. Specific recommendations identify areas requiring additional research to renovate state water laws consistent with present and prospective policies and needs.

This report was submitted in fulfillment of Grant No. R-803166 by Resources Administration and Development, Inc., under sponsorship of the U.S. Environmental Protection Agency. This report covers the period June 1, 1974 to October 31, 1976, and work was completed as of September 30, 1977.

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The author is deeply indebted to the many state water agency personnel and several water attorneys in western states that provided materials and numerous hours in meetings, conversing by telephone and examining portions of the report.

SECTION 1

INTRODUCTION

> . . . As administration of water rights approaches its second century, the curtain is opening upon the new drama of maximum utilization and how constitutionally that doctrine can be integrated into the law of vested water rights. We have known for a long time that the doctrine was lurking in the backstage shadows as a result of the accepted, though oft violated, principle that the right to water does not give the right to waste it.
>
> Justice Graves, 1968[1]

EVOLUTION OF A PROBLEM

And so it is that the seventeen western states are now faced with a complex and sensitive situation that behooves the imaginative capabilities of water administrators, users, engineers, lawyers, economists, sociologists, and the public to work on solutions that will lead to a maximum utilization of water in terms of both water quantity and quality, surface and ground, and upper and lower basins. Water law is a term that is rapidly becoming known to people throughout the United States as more and more awareness is brought about due to interests desiring water and finding out that this resource cannot be legally touched without complying with a host of complex rules and regulations at various jurisdictional levels. This report is an introduction into how these rules and regulations developed, and how the issue of irrigation return flow became of national importance. It is indeed a very interesting history, ranging from no control and free use of the resource in the West through an era of violence and conflict in the mid to late 1800's on into a recognition of a need to establish some systematic format for resolving disputes between existing potential water users. It is unique because this is a resource which in many countries is considered a free good, like air and water. It is a resource whose development coincided with land development in the West, and as a consequence, there is a high degree of similarity and connection between land and water resources control. This similarity, for example, does not exist with the development of other natural resources such as gas and oil.

Whenever water is diverted from a river for irrigation use, the quality of the return flow becomes degraded. The degraded return flow then mixes with the natural flows in the river systems. This mixture is then available to downstream users to be diverted to satisfy their water demands. This process of diversion and return flow may be repeated many times along the course of a river. In the case of original diversion, if the increase in pollutants contained in the return flow is small in comparison to the total flow in the river, the water quality would probably not be degraded to such an extent that it would be unfit for use by the next downstream user. If the quantity of pollutants (e.g., salinity) in the return flow is large in relation to the river flow, then it is very likely that the water is not suitable for the next user unless the water is treated to remove objectionable constituents. Since water is diverted many times from the major rivers, the river flows show a continual degradation of quality in the downstream direction. As the water resources become more fully developed and utilized, without controls, the quality in the lower reaches of the river will likely be degraded to such a point that the remaining flows will be unsuitable for many uses, or previous uses of the waters arriving at the lower river basin no longer will be possible.

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[1] Fellhauer v. People, 167 Colo. 320. 447 p.2d 986.

The major problems resulting from irrigation are due to the basic fact that plants are large consumers of water resources. Growing plants extract water from the supply and leave salts behind, resulting in a concentration of the dissolved mineral salts which are present in all natural water resources. In addition to having a greater concentration of salts in the return flow resulting from evapotranspiration, irrigation also adds to the salt load by leaching natural salts arising from weathered minerals occurring in the soil profile, or deposited below. Irrigation return flows provide the vehicle for conveying the concentrated salts and other pollutants to a receiving stream or ground water reservoir. It is necessary then to examine the waterlogging and salinity problems resulting from this process and to develop and implement measures to control or alleviate the detrimental effects. The reader is directed to Section 4 of the companion study, Achieving Irrigation Return Flow Quality Control Through Improved Legal Systems, for an elaboration of the irrigation return flow problem and its physical characteristics.

To maintain agricultural productivity in irrigated agriculture--and we must do more than that today--salts applied onto the croplands, which are dissolved in the irrigation water supplies, must be moved below the plant rootzone in order not to retard plant growth. Therefore, it is mandatory that water supplied to a crop must exceed the actual water requirement of the plants to include evapotranspiration needs, leaching requirements, seepage losses, and in most cases other transit or ditch losses which may be substantial.

Usually the quantity of irrigation water diverted from a river far exceeds the cropland water requirement. Data from many irrigated regions indicate that seepage losses from canals and laterals throughout the water distribution systems are extremely high. Added to this problem is the excessive application of water on farm fields, which results in surface runoff from the lower end of the field (tailwater runoff) and/or large quantities of water moving below the root zone (deep percolation). The combination of seepage and deep percolation losses cause ground water levels to rise (waterlogging). In many irrigated regions, the ground water levels have reached the vicinity of the root zone which frequently results in the upward movement of ground water due to capillary action. When upward moving water reaches the soil surface and evaporates, the salts contained in the moisture are left behind on the ground surface. This process of salinization has not only resulted in declining agricultural production, but has caused many lands to become essentially barren.

Historically, some degree of salt concentration due to irrigation has been usually accepted as the price for irrigation development. In some areas, however, there has been so much laxity that quality degradation has become a serious matter. As pressures on water resources become greater due to increasing populations and the necessity to produce food in increased quantity and improved quality, there is a mounting concern for proper control of serious water quality deterioration and soil salinization. The need, then, for more precise information as a basis for wise policy action is a matter of critical importance.

PHYSICAL SOLUTIONS

There are a number of potential solutions for controlling the quantity and quality of irrigation return flow. The irrigation system can be subdivided into the water delivery subsystem, the farm, and the water removal subsystem. Using efficient practices in the delivery canals and pipelines as well as improving on-farm water management will minimize the problems in the water removal system. In most cases, the key to minimizing irrigation return flow quality problems is to improve water management practices on the croplands.

The water delivery system can be improved by lining canals and laterals, using closed conduits for water transportation, providing adequate control structures, and installing flow measuring devices. Improved practices that can be used on the farm include judicious use and application--or placement--of fertilizers, use of slow-release fertilizers, controlling water deliveries across the farm, use of improved irrigation application methods (e.g., subsurface application of trickle irrigation), control of soil evaporation, use of a pumpback system to allow recycling of surface return flows, erosion control practices (e.g., contour farming), and irrigation scheduling to insure that proper amounts of water are applied at the times required by the plants. In the water removal subsystem, open drains and tile drainage can be used to collect return flows, which can then be subjected to treatment on a large area or basinwide basis, if necessary.

There are also various institutional methods which can be used to control irrigation return flow quality. These methods include restricting irrigation development in areas of potentially high salt pickup, regulations on the use of fertilizers or agricultural chemicals, tailwater controls which would not allow surface runoff from a farm, increasing water rate charges, changing western water laws, use of irrigation scheduling to overcome institutional constraints, consolidation of irrigation companies in an irrigated valley into a single management unit, and/or requiring that anyone degrading the quality of water pay the cost of treating this water. But the task has been a difficult one to handle in spite of our knowledge of ways to solve this particular problem.

LEGAL IMPLICATIONS

Early in the history of the West, it was established that each state could develop its own system of water laws to govern the allocation and distribution of this resource. The appropriation doctrine emerged from the conditions existing in arid and semi-arid lands, and each of the seventeen western states created water laws around the basic precepts of that doctrine. Although accepting the major concepts of prior appropriation, significant differences occurred in the substantive and administrative aspects of the various state water laws. To further complicate the means of water regulation and control, the more humid states in the High Plains and West Coast region also integrated the common law riparian doctrine of England.

Ground water legislation occurred much later in the states due in part to the lack of knowledge of subsurface supplies and in part to adequate surface sources. The basic principles for use and control follow the surface doctrine , but again, each state adopted and modified the law to fit its perceived needs.

These laws, developed to solve particular problems at a sectorial basis, lead to a lack of uniformity of policy and guidelines within the state as well as among the states. For example, traditional western water law was designed first to insure the miners of a water supply. Shortly thereafter, agriculture became the dominant sectorial interest, greatly influencing the law's growth. Without reshaping the contemporary system of the early 1900's, municipal and industrial users were granted privileges and rights under the law. As a consequence of the erratic and sporadic nature of the evolution of western water laws, contradictions arose between the surface and ground water doctrines and between the rights and privileges designated for various uses of water, creating doubt and frequently hostility among users.

The system of water law and administrative mechanism of these western states can be classified as "use-oriented"--the dominant objective being to utilize the water to produce an economic gain, which to many meant a livelihood and to others a profitable venture. Although this method of development in the law was justifiable under the growth conditions of this country 50 or 100 years ago, we have now progressed beyond the point of sectorialism. It lacks the maturity of incorporating the progress of other disciplines and the changing patterns of American lifestyle. For example, many state laws still operate in near total ignorance of the hydrologic interface between ground and surface water.

Directly affecting the management of water in the West is the water right designed to provide the water user with the same constitutional guarantees extended to real property. The resulting effect upon agricultural users is that certain rigidities in the exercise and protection of the right inhibit adaptation of more efficient practices. Furthermore, the right holder is primarily concerned with his immediate geographic area, and not with the effects from exercising his right upon downstream users who may be in another state and themselves subject to different rules and regulations.

A more blatant criticism is the absence of quality considerations under the appropriation doctrine. That is to say, among the elements of a water right and the procedures for exercising that right, there is no statutory mention in the majority of state laws regarding quality of water. Implicitly, water right holders are entitled to the quality of water existing at the time of their appropriation. Explicitly, courts in a few states have protected the irrigation user from upstream polluters, but these judicial interpretations involved extreme instances of water degradation from mine tailings, and the cases occurred in the early 1900's. The issue between agricultural users has not been resolved, nor has the quality degradation question between the aggregate of irrigation users and other diverters been judicially challenged.

Today, the interrelationship of quantity and quality is recognized due to progress in technology. Technologically, approaches have been developed to identify the nature and amount of pollutant input and to control the concentration through improved management practices. Unfortunately, irrigation return flow quality control has been neglected or ignored by the users and water administrators, and thus has not been incorporated into state water laws. Thus, there is a need to examine the status of the state water laws and to identify the constraints in the law that prevent efficient water management cognizant of water quantity and quality relationships and impacts. We must be compelled to move from the "use-oriented" legal control system to a "management-oriented," well-designed and uniform set of laws and policy instruments, taking into account the total environmental impact yet flexible enough to sustain change. No longer can states utilize their waters independent of and without regard for the environmental impact upon their neighbors. However, the underlying manifestations of change in philosophy must take into account the established rights and duties of water users and the social structure engendered under the existing system.

The rapidly changing conditions in our country due to increased population, increased urbanization, increased industrialization, and increased concern with ecological mismanagement demand that the policies, provisions and procedures set forth in water laws be reevaluated and updated. Before this can be accomplished, we must know exactly where we are, what features of existing laws enhance the goal of total water management in conjunction with other environmental and ecological concerns, and what features of the law should be modified, reinterpreted, or eliminated due to their constraining features.

PROJECT OBJECTIVES

Improved water management through coordinated planning has been a vital goal of national and state governments since the mid-1960's with the passage of the Federal Water Resources Planning Act of 1965 (PL 89-80) and creation of state programs to prepare state water plans. This goal took on the element of quality management as well as quantity management about the same time, but with attention directed to water quality problems arising from municipal and industrial discharges. However, during the past five years, irrigation return flow quality control has become a regional and national issue (see Figure 1).

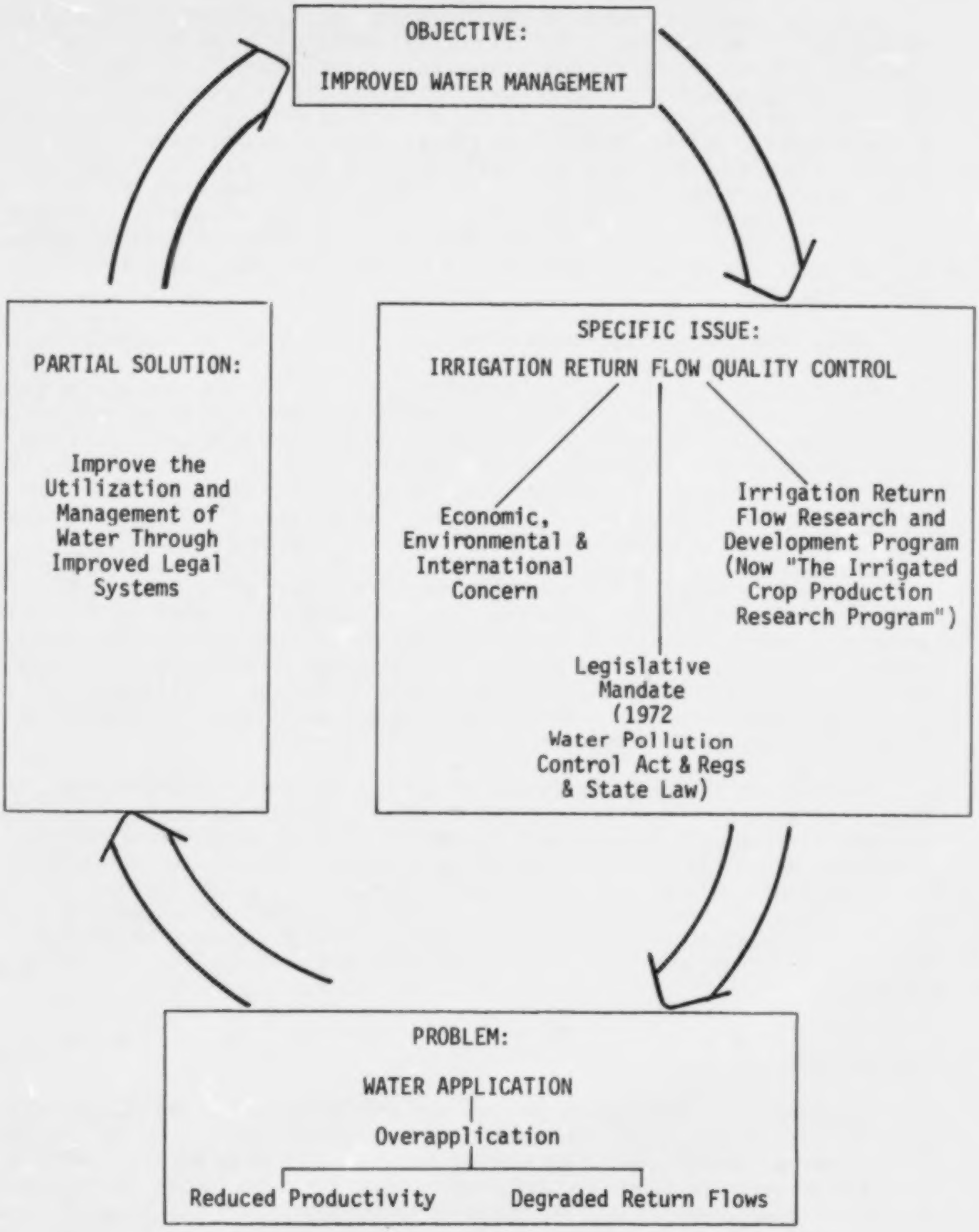
OBJECTIVE:
IMPROVED WATER MANAGEMENT
SPECIFIC ISSUE:
IRRIGATION RETURN FLOW QUALITY CONTROL
Economic, Environmental & International Concern
Legislative Mandate (1972 Water Pollution Control Act & Regs & State Law)
Irrigation Return Flow Research and Development Program (Now "The Irrigated Crop Production Research Program")
PROBLEM:
WATER APPLICATION
Overapplication
Reduced Productivity
Degraded Return Flows
PARTIAL SOLUTION:
Improve the Utilization and Management of Water Through Improved Legal Systems

Figure 1. Irrigation return flow and improved water management.

Salt loading in the streams and rivers has reduced effective utilization of water in several western river basins at a time when demands for suitable quantities of water for a wide range of uses have increased enormously from the regional growth and improved standards of living. In the Colorado River Basin, water users in Mexico and the Lower Basin states began to feel the economic effects of salinity concentrations in the river and to recognize the external diseconomies from irrigation return flows. The issue became the focal point of attention through environmental concern expressed by member states of the Colorado River Basin, the Rio Grande River Basin and, in particular, downstream irrigators and other water users who have had increased costs in water use due to rising salinity in the two rivers. Also, treaty and compact commitments are being examined and questions on responsibility raised.

The second element that has identified irrigation return flow quality control as one of major national and regional importance has been the legal expressions found in the 1972 Water Pollution Control Act Amendments (PL 92-500), and the subsequent EPA regulations. These provisions have been supported with the development of the National Pollutant Discharge Elimination System (NPDES) program and state water quality control acts with provisions oriented to improving the quality of the states' waters.

The topic received national prominance with the creation of the irrigation return flow quality control research and development program being administered by the Robert S. Kerr Environmental Research Laboratory in Ada, Oklahoma (Law, 1971). To assist the Federal Government in its efforts to control water pollution, this program was created to find practical and economic solutions to control salinity and nutrient concentrations introduced into our river systems through irrigation return flows. Research and demonstrations in select areas of the western states are developing improved and feasible water management technologies, but implementation still remains questionable if underlying institutional constraints remain unchanged.

The thesis of this report is that irrigation return flow quality control (IRFQC) can be implemented through efficient water management. This is contrary to the pollution control approach. However, it is felt that from an examination of the problem, this solution will be preventative rather than curative in the long run.

Research into the irrigation return flow quality control problem focuses upon water application from the irrigation system and the major agricultural uses of water. The problem develops when there is an overapplication of water. This is defined as an application of water beyond the needs of the crop requirements. Specifically, two types of detriments emerge. The first that has direct effect upon the agricultural user is retarded growth, or a failure to maximize production. The second problem is one which is not readily apparent to the immediate user, but ends as an externality to other users. This is a degraded return flow that is subsequently used downstream.

The key to partially resolving the water quality degradation trend attributed to irrigated agricultural return flow waters is proper utilization and management of the resource itself; and the accepted tool in our society is the law.

This report was designed to identify the necessary modifications and changes in interpretations of western water laws that will facilitate the implementation of improved water management technologies, thereby reducing and controlling salinity and other forms of water pollution resulting from the exercise of irrigation water rights. To accomplish this goal, three major objectives were pursued:

1. Identification and review of all relevant materials and literature pertaining to water laws in the seventeen western states, and rulings affecting water management in the West.

2. Preparation of a "state-of-the-art" report on state water laws for the seventeen western states, which included:

a. describing the system of water law in each state;

b. delineating the unique substantive, procedural, administrative, and organizational aspects of the law relevant to the project goal, placing particular emphasis upon the impact of the features as either constraints or facilitators to improved water management and use and their present role in the water quality degradation problems of the western states;

c. analyzing and emphasizing the role of water rights as property rights and other salient legal features in relation to irrigation return flow quantity and quality control.

3. Based upon the results of Objectives 1 and 2, general recommendations suggest conceptual changes to the state water laws that will provide and promote a legal atmosphere enabling more efficient and effective water management at the state and regional levels and specific recommendations identifying areas requiring additional research to renovate state water laws consistent with present and projected national, regional and state policies and needs.

A companion project entitled Achieving Irrigation Return Flow Quality Control Through Improved Legal Systems takes the results of this report and incorporates them into an elaboration of the water quality laws of the seventeen western states as well as the administration of both quantity and quality laws by these states. That project report, authored by Radosevich and Skogerboe (1977), further provides an interface of the law and technology, concluding with an influent control approach designed to meet federal law and regulation requirements as well as providing flexibility in the state agencies to attack the problem only where and when it exists.

RESEARCH APPROACH

Legal Tools and Literature Search

This project is an attempt to examine the legal aspects of irrigation return flow quality. The initial task was a systematic review of source material and the development of the parameters of the literature classification system. Because the project heavily emphasizes the legal dimensions of the water quality problem, the sources of materials and tools to identify them were primarily of the legal nature.

Synonymous with a vision of the law by the nonlawyers is wall-to-wall shelves stacked tightly with thick volumes of books exposing conspicuous, confusing titles and containing information classified according to large, nebulous terms with vague relationships to each other. These next few pages are included primarily to familiarize the reader who is not versed in legal research with the "tools" used in this report, and to increase understanding of the significance attached to the various legal sources.

To insure that all relevant materials were identified for this project, the traditional criteria for classifying legal materials were applied. The legal materials and the internal classification utilized throughout this report are divided into three major categories according to the weight attached to the authority. These three are primary and secondary authorities, and books of index. The primary authorities are further divided into statutory materials and judicial decisions. This authority is most persuasive to courts, and is controlling unless overturned or distinguished. Secondary authority is not controlling, and includes legal encyclopedias, texts, etc., as enumerated below. Books of index are tools or aids used in legal research to identify a precise case, statute, etc. They are discussed below:

I. Primary Authorities:

   A. Statutory material:

      1) Constitutional provisions for each of the project states and federal constitution concerning water resources.

      2) Statutes:

         a) For the seventeen western states, those statutes that are the state's water law system. Many states have separate compilations of their state water laws (i.e., Colorado Water Laws, by G. E. Radosevich, D. Hamberg and L. Swick, Center for Economic Education, Colorado State University, 1975 with updates; Idaho Water Laws and Regulations, Vols. I and II, Idaho Department of Water Administration, Boise, Idaho, 1974 with updates; and Wyoming Water and Irrigation Laws, Office of State Engineer, Cheyenne, Wyo.).

         b) Federal statutes granting states the jurisdiction over water resources within state boundaries; reservation doctrine;

water pollution control and provisions related to salinity control and agricultural uses of water. These materials are found in statutes at large, United States Code and United States Code Annotated.

3) Administrative Rules, Regulations and Rulings:

   a) State water resources agency rules and regulations and rulings concerning the use of water;

   b) Federal regulations and rulings on the subject found in the Code of Federal Regulations and Federal Register.

4) Treaties concerning division of international waters between Mexico and the U.S.A., Canada and the U.S.A. on the Colorado, Rio Grande, Tijuana, and Columbia Rivers.

5) Interstate water compacts between the states of the project area. Compacts are reported in the United States Code, state statutes and separate publications.

B. Judicial material:

1) State Supreme and appellate court decisions interpreting state water law and resolving disputes in the allocation, distribution and utilization of the water resources. Volumes of water cases have been decided during the past 100 years. Only those pertaining to the project have been incorporated into this study. Two reporting systems exist for retrieval of the state case law:

   a) state reporters for each state; and

   b) The National Reporter System prepared by West Publishing Company.

   In the latter system, states are divided into nine regions and the reporter for each region contains all the cases for those states within that region. The regions are:

   a) Atlantic Reporter, i.e., 10 A.^{2} 63;

   b) California Reporter, i.e., 15 Cal. 91. California has a separate national reporter for that state's decisions. In addition, California cases are included in the Pacific Reporter.

   c) New York Supplement, i.e., 127 N.Y.S. 71;

   d) Northeast Reporter, i.e., 99 N.E.^{2};

   e) Northwest Reporter, i.e., 426 N.W. 72;

f) Southeast Reporter, i.e., 88 S.E. 137;

g) Southwest Reporter, i.e., 200 S.W.^{2}, 56;

h) Southern Reporter, i.e., 20 S. 56;

i) Pacific Reporter, i.e., 3 P.^{2} 727.

2) Federal cases deciding issues relevant to the project scope are included also for their bearing upon the status of irrigation return flow quality and potential impacts upon improvements in quality control to be recommended. These cases are reported in U.S. Reports, Supreme Court Reporter--Lawyers Edition, Supreme Court Reporter, Federal Reporter, and Federal Supplement. The latter three reporters are a part of West's National Reporter System.

3) In addition to the case reporters for state and federal decisions, analyses and annotations of cases according to select subject matter are found in the A.L.R. series.

II. Secondary Authorities.

A. There are two legal encyclopedias: Corpus Juris Secundum (C.J.S.) and American Jurisprudence (Am. Jur.). They contain a topical analysis of the law and are most useful in beginning research on a topic. Significant to this project is the topic 93 C.J.S. Water, and Waters and Water Rights in Am. Jur.

B. Texts (i.e., Water Resources Management by Meyers and Tarlock); Restatements of the Law (i.e., Restatement of Property, of Water Law, etc.); Treatises and legal periodical articles (i.e., Land and Water Law Review, Natural Resources Journal, etc.) have been searched and utilized for their value.

C. Select briefs prepared by agencies and attorneys on the subject have been examined. These briefs, particularly to state supreme court decisions, can be found in the depositories to the state supreme courts or obtained from their originators.

D. Nonlegal materials have been used to identify the parameters of the problem and relate the operation of the law to the consequences of irrigation return flow. These sources include: University research project reports (i.e., Consolidation of Irrigation Systems: Engineering, Legal and Sociological Constraints and Facilitators, by Skogerboe, Vlachos and Radosevich, C.S.U., 1973; Characteristics of Pollution Problems of Irrigation Return Flow by Utah State University Foundation, 1969); agency reports (i.e., Mineral Quality Problem of the Colorado River Basin by E.P.A., 1971; Need for Controlling Salinity of the Colorado River by Colorado River Board of California, 1970); and National Water Commission reports; comprehensive framework studies; and other materials produced by consultants, agencies, water user organizations, material from nonlegal periodicals, new reports, and organizational newsletters.

III. Books of Index.

As previously stated, books of index are crucial to anyone desiring to identify the status of the law on a particular topic. The primary indexes are organized around three major categories: legislative enactments, i.e., constitutional provisions, statutes, compacts, and treaties; judicial decisions at the state and federal level; and the index to legal periodicals.

Indexes to state statutory materials are easily found within the set of volumes containing the statutes. It is important in using the state index and statutes, however, to include a review of yearly enactments from the date of the codification. They may be found as bound session laws and supplements to the bound volumes. A few states have adopted an insert system so that deleted or replaced statutes are discarded and the amendments inserted.

Identification of judicial decisions is through an index called Digests which, through the extensive topic and subtopic breakdowns, not only will provide the decision but also a short summary of the point of law of the case. There are three major digest systems: 1) General and Decennial Digest; 2) digest for each national reporter; and 3) state digests. The General Digest contains yearly volumes of case identifications from the last Decennial, or ten-year compilation. All topics are contained in each volume of the General Digest, whereas the Decennial volumes are amalgamations of all cases with several topics per volume.

To determine if there are any cases on a particular topic in a certain jurisdiction, select the most general descriptive term (i.e., water) and proceed to that topic, alphabetically arranged in all of the Digest systems. A further topical breakdown will provide the materials on the major topic. If the selected term is not used in the Digest, refer to the descriptive word index which accompanies the digests. A series of volumes entitled Words and Phrases, prepared by West, may be useful to locate any case in the U.S. in which a word or phrase has been defined or case turned upon.

To check if a case is still good law, refer to Shepard's Citations. These volumes, organized by federal and state decisions and according to regions, are highly complex to use, and it is suggested that the user read carefully the instructions contained in each citator. The importance of the citator is to determine if the case identified as pertaining to the issue is: a) still good law; b) overturned; c) distinguished; and d) if other cases have been decided which rely upon this decision. The Digests, citators, and descriptive word indexes are kept current by supplemental volumes or inserts. The Index to Legal Periodicals contains the topical and author identification of all articles published in legal journals. The citation provided will give the author, articles, journal, volume, page, and date.

There are several items of usefulness to the lawyer and nonlawyer in expanding one's knowledge of the legal research tools and materials. On the federal side, two committee prints are important: The United States Courts, Their Jurisdiction and Work, Committee Print, Committee on Judiciary, House of Representatives, U.S.G.P.O. 1975; How to Find U.S. Statutes and U.S. Code Citations, 2nd Revised Edition, Committee Print, Committee on the Judiciary, House of Representatives, U.S.G.P.O. 1971.

West Publishing Company has prepared a brochure on identifying the relevant cases according to their "key numbering" system entitled West's Law Finder. In addition, they have recently developed WestLaw, a computerized legal research system for judicial decisions for select years.

Of particular importance to water resources and environmental matters are two compilation systems that anyone working in these areas should become familiar with, regardless of discipline. They are the Environmental Reporter and Environmental Law Reporter. They contain most of the federal and state statutory materials on environmental matters, including water quality laws (but not the water quantity laws), federal rules and regulations, state and federal environmental and resources decisions, and commentary articles. Explanations on how to use them accompany each set.

Citations and Footnotes

As an alternative to the usual legal practice of placing citations at the end of the report or page in footnote or end note fashion, citations will be contained in the text. This method was adopted to enable the reader, regardless of discipline, to use the references to his best advantage. Explanatory notes accompanying the citation are placed in the text following each section of the main report and are placed at the bottom of the page for the state reports contained in Appendix A.

For citations of cases and statutory materials, the following procedure is applied:

> i.e., the East Bay Utility Department was formed and functions under the Municipal Utility District Act (Pub. Util. Code, div. 6, Sec. 11501 et. seq.).
>
> In Ivanhoe II, the court noted that Water Code section 23195 authorized irrigation districts to enter into contracts with the United States. (Ivanhoe Irr. Dist. v All Parties, 53 Cal. 2d 692 at p. 706, 1960). It also noted several sections of the Water Code are contrary to federal law (Id. at p. 706).

The format used throughout this report for citing constitutional and statutory provisions, cases and other reference works is as follows:

1. Constitutional Provisions: i.e., Arizona: Ariz. Const. Art. XVII.

2. State Statutes:

# State	Statute Title	Abbr.	Example
(1) Arizona	Arizona Revised Statutes	A.R.S.	A.R.S. Sec. 45-107
(2) California	California Water Code	C.W.C.	C.W.C. Sec. 1240
(3) Colorado	Colorado Revised Statutes	C.R.S.	C.R.S. Sec. 38-6-201
(4) Idaho	Idaho Code Annotated	I.C.A.	I.C.A. Sec. 42-204
(5) Kansas	Kansas Statutes Annotated	K.S.A.	K.S.A. Sec. 82a-713
(6) Montana	Revised Code of Montana	R.C.M.	R.C.M. Sec. 89-2917
(7) Nebraska	Reissue Revised Statutes of Nebraska	R.S.S.N.	R.R.S.N. Sec. 46-201
(8) Nevada	Nevada Revised Statutes	N.R.S.	N.R.S. Sec. 533.355
(9) New Mexico	New Mexico Statutes Annotated	N.M.S.	N.M.S. Sec. 75-1-35
(10) North Dakota	North Dakota Century Code Annotated	N.D.C.	N.D.C. Sec. 61-04-14
(11) Oklahoma	Oklahoma Statutes Annotated	O.S.A.	O.S.A. 82 Sec. 1205
(12) Oregon	Oregon Revised Statutes	O.R.S.	O.R.S. Sec. 537-250
(13) South Dakota	South Dakota Compiled Laws Annotated	S.D.L.	S.D.L. Sec. 46-5-65
(14) Texas	Vernon's Texas Code Annotated Water	T.C.A.	T.C.A. Sec. 5.001
(15) Utah	Utah Code Annotated	U.C.A.	U.C.A. Sec. 73-3-18
(16) Washington	Revised Code of Washington	R.C.W.	R.C.W. Sec. 90.48.162
(17) Wyoming	Wyoming Statutes Annotated	W.S.A.	W.S.A. S3c. 41-206

Where other state statute compilations are used, a full citation is provided. States also have yearly session laws. These laws are cited, i.e.: Colo. S.L. and date. Where the law has been codified into the statutes and the date of enactment is significant, this reference will be made as follows: i.e.: C.R.S. Sec. 38-6-201, L. 1974, meaning enactment of 1974.

3. Cases

The standard system for case citations is followed for both federal and state decisions. State decisions have both a reference to a state reporter and the West National Reporter for the region. The state citations provide the volume, state and page, i.e.: 437 Ariz. 526, respectively, and the National Reporter system provides the volume, reporter and page, i.e.: 321 P.2d. 726, respectively, meaning volume 321, Pacific Reporter 2nd Series, page 726. The national reporters for the seventeen western states are:

Reporter	States	Example Citation
Pacific Reporter	Arizona, California, Colorado, Idaho, Kansas, Montana, Nevada, New Mexico, Oklahoma, Oregon, Utah, Washington, Wyoming	726 P.2d 324
North Western	North Dakota, South Dakota, Nebraska	426 N.W. 78
South Western	Texas	126 S.W. 2d 900

The date of the decision follows the citation. Thus, a complete citation would appear as follows: Jones v. Smith (78 Ariz. 563, 126 P. 728, 1935).

4. Other References

The procedure used for reference to published works is as follows:

i.e., ______________ (Jones, 1947).

i.e., "____________" (Jones, p. 52, 1947).

i.e., ______________ (A Legislative History..., p. 693, 1975).

These cited reference sources are listed in the References section of this report.

STATE REPORTS

In order to determine each state's programs and procedures for allocations, distribution and administration of waters within its boundaries, it was necessary to prepare state-of-the-art reports on the water quantity laws and related matters for each of the seventeen western states. In compliance with objectives 1 and 2 of this study, all state water quantity statutes, relevant judicial decisions and agency regulations were identified and analyzed.

Appendix A contains the individual state reports on water quantity for each of the seventeen western states. Each report is coded by a number alphabetically assigned the states as follows:

Code	State	Code	State	Code	State
1	Arizona	7	Nebraska	13	S. Dakota
2	California	8	Nevada	14	Texas
3	Colorado	9	N. Mexico	15	Utah
4	Idaho	10	N. Dakota	16	Washington
5	Kansas	11	Oklahoma	17	Wyoming
6	Montana	12	Oregon		

The reports follow a systematic format for easy comparative analysis between states. The first digit refers to the state report number assigned as previously set forth. The second digit refers to the major topic and the third digit to subtopics. Additional categories are not given numerical designation. The outline is as follows, with the first digit, number 1, referring to the Arizona state report according to the code number assigned:

1.1 HISTORICAL BACKGROUND
1.2 SUBSTANTIVE LAW
1.2.1 Property Right in Water
1.2.2 Acquisition of Right
1.2.3 Adjudicated Water Rights v. Historical Diversion

1.2.4 Conditions of Use
1.2.5 Manner in Which Rights May be Adversely Affected
1.2.6 Legal Incentives and Disincentives for More Efficient Water Use Practices
1.2.7 Waste Water Disposal and Drainage
1.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS
1.3.1 State Water Agencies
1.3.2 Judicial Bodies
1.3.3 Water Users and Their Organizational Structures
1.4 POLLUTION CONTROL
REFERENCES

SECTION 2

CONCLUSIONS

1. The appropriation doctrine in its basic form, but with modification of select precepts, is still the most ideal legal structure to allocate, distribute and administer water due to its general characteristics of continuity, flexibility and identity.

2. The property right concept in water for agricultural use will continue to be the single most critical factor for focus in developing successfully implementable preventative and curative solutions to the irrigation return flow quality problem, i.e., a change from perpetual to fixed term water rights with more specific conditions and duty for use of the resource. However, the protection from impairment of vested water rights is a paramount concern and obligation of both the courts and water administrators.

3. Generally, there is: 1) a lack of specificity of state water laws in such key concepts as beneficial use, waste and public versus private rights to resource use; and 2) a lack of uniformity in water laws between neighboring states sharing the same surface and ground water resources.

4. The concept of customary or community practices is still accepted by most states as the guideline for individual water use efficiency.

5. There exists in many state laws and judicial decisions, legal disincentives for recapturing of salvaged or developed waters (e.g., Arizona, and Colorado).

6. Inadequate records (i.e., present owner/user versus original applicant) will forestall or prevent legally enforceable programs for water use efficiency. It should be pointed out, however, that many states (e.g., Colorado, Montana, Utah, Wyoming) are in the process of maintaining adequate and complete records of current water right holders.

7. At the water user level, failure to explicitly provide for corresponding duties to the right to use water, within the spectrum of water user categories, creates inequities in the system.

8. Administrative capabilities are often hampered by deficiencies or restraints in the law (e.g., lack of pragmatic ground water laws, limitation on agency jurisdiction to handle problems directly related to the agency's primary functions).

9. There is a general tendency for state water agencies to regard the technical "water right holders" as their main constituency and not to view the public "water user" on an equal basis.

10. There is a failure in many state water laws to administratively incorporate water quantity and quality control to the extent that water quality is an explicit element of a water right, both for water use and discharge of return flows.

11. The complex and compounded jurisdictions of state and local public water agencies cause apathy among water users and administrators.

12. The emergence of the super-intervening "federal water rights" and federal water quality control tactics affecting irrigation return flows has polarized state water agencies and users into a dogmatic front to protect vested water rights.

13. On the positive side, aside from considering the doctrine of prior appropriation in concept as the most fundamentally acceptable and appropriate water doctrine for the West, and aside from the fact that many states are making significant recent progress to modernize the water laws, several states have commendable legal provisions and organizational arrangements which enhance their overall capacity to improve the quality of highly degraded irrigation return flows. Among the most important are:

    a. The definition of beneficial use found in California and Washington statutes.

    b. Washington's provisions that do not allow condemnation of agricultural water rights where certain criteria are followed by the agricultural water user.

    c. Nevada's concept of duty of water.

    d. The contract approach to water allocation practiced in California and Utah.

    e. The administrative integration of water quantity and quality control in California and Washington.

    f. Adding water quality as a specific element to a water right in California.

    g. Placing the burden on water users to help the state keep water right records current (Idaho, Oklahoma).

    h. Forfeiture statutes with a nonuse only time frame to rid the records of "paper" and unexercised water rights.

    i. Texas' periodic evaluation of outstanding permits resulting in cancellation of unused permits.

j. The New Mexico statutory recognition of a reasonable degradation from water use.

k. The Kansas requirement of periodic checks on water waste and quality impacts.

SECTION 3

RECOMMENDATIONS

In recognition of: 1) the hydrologic interrelationship between surface and ground water; 2) the correlation between water use and water quality degradation; and 3) the flow characteristics of the resource in an area of the country where irrigation is the major water user, but where expanding populations, increasing industrial activities, strong environmental concerns, and rapidly developing energy activities are placing a heavy demand on available water supplies, it is recommended that the states:

1. Seek to achieve improved recognition by the laws and in the application of the interdependencies and interrelationships of water quantity and quality and with other natural resources.

2. Seek to achieve improved uniformity of the water laws between the states.

3. Develop uniform criteria for efficiency in water use per user sector to include criteria or standards for beneficial use, waste and duty of water, and that such criteria apply to all users, and not just competing water right holders or applicants.

4. Embark upon a continuing education program for water users to bring about an awareness of water problems and better use practices in an effort to develop a social consciousness in the use of water resources.

5. Adopt a program to maintain a current registry of water right holders or users with the further recommendation that the burden of providing annual notice of acquisition of water rights and/or exercise of water rights be upon the water right claimant.

6. Define the "public trust" duty of state and public water agencies.

7. Define the rights and duties of public and privately organized individuals, agricultural water users at all levels of the irrigation subsystem, i.e., water diversion and conveyance, water application and water removal subsystems.

8. Expand the conditions or elements of a water right to explicitly include water quality.

9. Adopt a system of term permits and state negotiated contract water rights for future allocation of unappropriated waters.

10. Encourage the transfer or assignment of water rights to regional water authorities for improved dependability of delivery of needed supplies, management of the available water resources in the area, and maximization of the use of the resource.

11. Adopt a policy and process for the conjunctive use of ground and surface waters.

Specific recommendations of needed research are:

1. Analyses of de facto water agency operations in enforcement of beneficial use and waste, and duty of water.

2. Attitudinal study of what state water agencies perceive to be their role in water distribution, development and management.

3. In-depth examination of local water user organizations' duty to the state and public in the use of appropriated waters.

4. Determine the real benefits of conservation practices upon improving degraded irrigation return flows.

5. Explore approaches and costs of converting from a perpetual water right system to a system where water is allocated under term permits and "contract water rights."

SECTION 4

THE ARENA

SYSTEM COMPONENTS AND ORGANIZATIONAL ARRANGEMENTS

Attention upon irrigation return flow has come about partly because of the interaction of the legal and organizational systems with the natural resource system and perhaps more through the tendency of our political system to lean heavily upon "law" to resolve problems. The problematic framework within which the analysis will be carried out restricts itself to these systems (Figure 2).

The legal component is divided into the substantive system and the implementation system. The substantive system can be further broken down into the static and the dynamic component. The static component consists of the law which has created the concept of the property right in water and which is based upon the concepts of real and personal property in law. As it applies to water, this property right is one of use, not ownership. This usufructuary right in water specifies the source of the supply, the quantity of water to be diverted, the point of diversion, the type of use, and the place of use. The latter two characteristics of a property right under the appropriation doctrine give rise to the time element of the property right; for example, if it is a municipal right that is being used to supply water in a municipality, the right will be exercised three hundred and sixty-five days out of the year. However, if it is an agricultural right, it is valid for the growing season, i.e., one hundred and eight days or no more than filling of a reservoir once a year. Missing from the elements of a property right in water is a specific reference to water quality with the exception of California. The element of water quality in the majority of states can only be pursued and preserved under the common law nuisance doctrines. In California, the state has integrated water quality and quantity control into the law, and in the past five years the quality of water has become a feature of water right application.

The dynamic process of the water rights system involves the necessary action in order to exercise the water right. The first is that there must be a diversion of the water from a source of supply. This has been defined in various ways under state laws to include the most strict interpretation of the physical diversion from the water ways to a symbolic diversion according to the use to which the water is being made, thus allowing for instream uses. A second element is the application of water to beneficial use. Again, this definition ranges widely among states' laws, but in general pertains to the utilization of water for one of the recognized beneficial uses of water, such

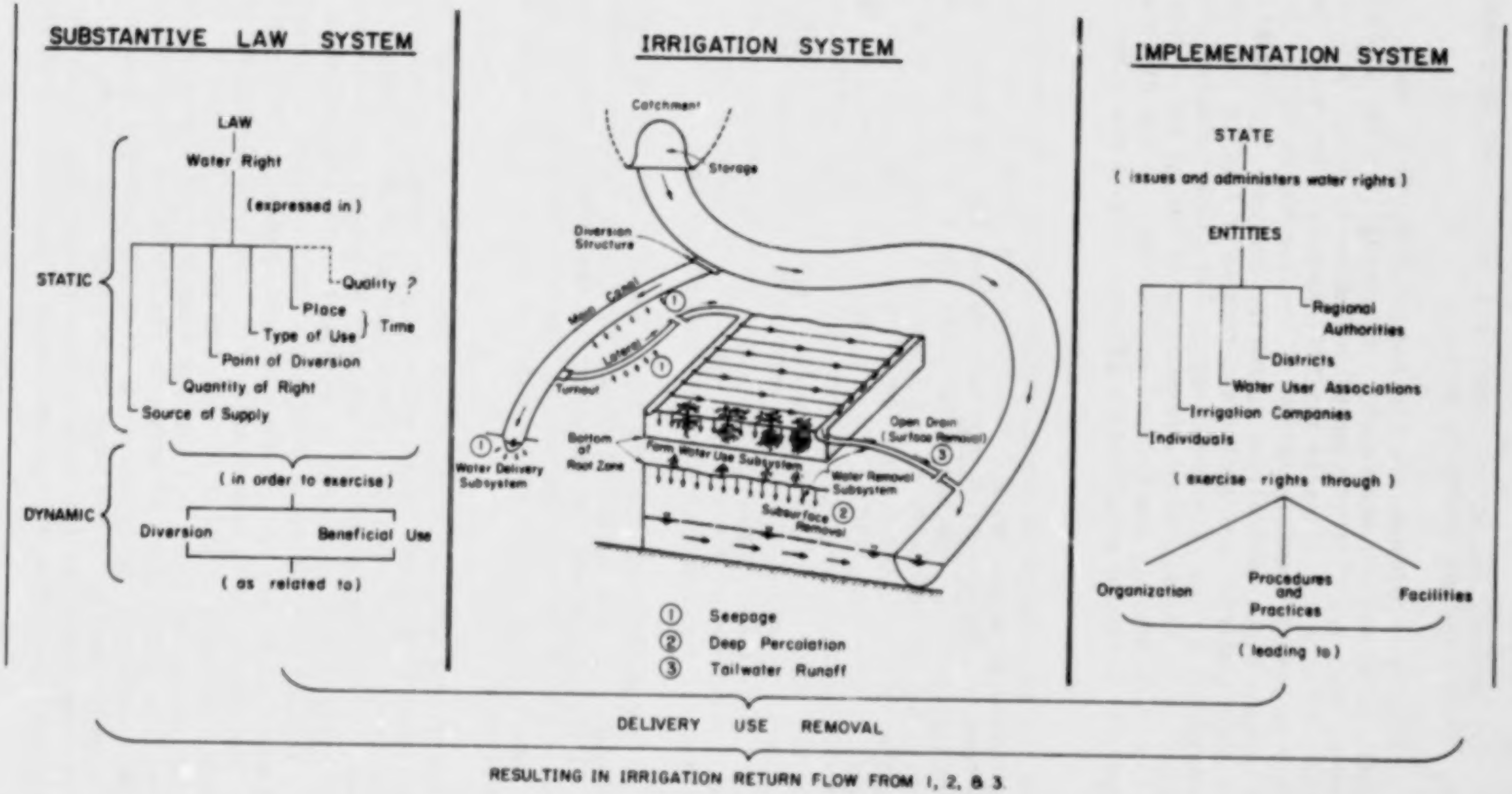
SUBSTANTIVE LAW SYSTEM
LAW
Water Right
(expressed in)
STATIC
Quality ?
Place
Type of Use
Time
Point of Diversion
Quantity of Right
Source of Supply
(in order to exercise)
DYNAMIC
Diversion
Beneficial Use
(as related to)
IRRIGATION SYSTEM
Catchment
Storage
Diversion Structure
Main Canal
Lateral
Turnout
① Water Delivery Subsystem
Bottom of Root Zone
Farm Water Use Subsystem
Open Drain (Surface Removal)
Water Removal Subsystem
Subsurface Removal
① Seepage
② Deep Percolation
③ Tailwater Runoff
IMPLEMENTATION SYSTEM
STATE
(issues and administers water rights)
ENTITIES
Regional Authorities
Districts
Water User Associations
Irrigation Companies
Individuals
(exercise rights through)
Organization
Procedures and Practices
Facilities
(leading to)
DELIVERY USE REMOVAL
RESULTING IN IRRIGATION RETURN FLOW FROM 1, 2, & 3.

Figure 2. The arena.

as domestic, irrigation, industrial, municipal, and in the most contemporary definitions, recreation and aesthetic uses.

The substantive provisions are carried out through an implementation system at the public and private levels. Responsibility for administering the state water laws and distribution of the water is normally designated to a state agency created specifically for this purpose. The usual functions of the state agency include administration of the law and distribution of the water, but in many cases centralized authority includes adjudication of water rights in a quasi-judicial proceeding and responsibility for statewide planning and management of the water resources. The state agencies have field offices according to the hydrologic boundaries of basins and subbasins within the state. In many states, specialized courts--such as the division water courts in Colorado--handle adjudication of water rights and other water right problems.

Beyond the administrative structures of the state is the spectrum of entities oriented to acquiring and exercising the water rights. These entities range from the individual farmer who applies for the water right; to the company which represents a gathering of water users to share the costs and to take advantage of the economies of scale through cooperation in diverting and delivering the water; to the federation of several companies into water user associations; to the irrigation districts which are quasi-public to public entities having power to levy taxes upon all land owners within their boundary; to regional type of authorities such as conservancy or conservation districts, or river basin authorities organized along either hydrologic boundaries or politically designated boundaries. In many instances, drainage is included as a function of the entity. Specific legislation exists in most western states for the creation of formal organizations.

Each of these entities utilizes their water right in the implementation process through: 1) the organization as one of the members of the range of entities; 2) the procedures and practices of the entity; and 3) facilities for diversion and delivery. The substantive and implementation systems were initially developed in direct relationship to the utilization of water in the irrigation system.

The irrigation system can be broken down into a variety of components categorized according to source of water supply, method of delivery, place of use, and types of return flow. These sources of water supply may come from either: a) a river or natural stream; b) ground water as pumped through a well; or c) through a catchment of diffused surface waters or a tapping of a spring. The water is diverted from the source through a conveyance system owned and operated by any one of the entities heretofore mentioned. There may be an instream or offstream storage facility which holds water allocated for use under the water right. Through the delivery and use of the water, return flows may occur from: 1) seepage from the conveyance system; 2) deep percolation from application of water to the field; or 3) tailwater runoff. This return flow water may either enter directly into the same or other source of supply, or into a drainage ditch which then conveys it to a river system. The importance of the relationship between the legal and irrigation systems is the impact upon irrigation return flow quality from the exercise of the water rights in the dynamic process of diversion and application to beneficial use.

The dynamic process of water use can be broken down into the three subsystems of the irrigation system--delivery, use and removal. Through the exercise of water rights, water is diverted and applied, resulting in irrigation return flows which are delivered back to the natural water courses for use by downstream appropriators. Without the diversion, delivery and application, return flows would only arise from natural distribution of precipitation. Man has modified this natural regime to meet his particular requirements and capabilities, resulting in a host of varied rules and standards for diversion, delivery and use. These rules and standards create rights and obligations, ingrained with practice and time and resistant to rapid change. The processes for carrying out the rules lead to the development of a range of formal and informal, public and private, single and multiple purpose enterprises. They, too, become set in their ways and resist deleterious change as perceived by their operators.

AGRICULTURAL DEVELOPMENT IN THE WEST

The western United States is comprised of a number of regions formed by natural river drainage basins, not necessarily coinciding with administrative boundaries. To generalize, one may say that with the exception of the Columbia-North Pacific region and some portions of the California and Missouri regions, the area known as the Mountain and Western States simply lacks an adequate supply of water. Water that is produced there is not available where needed or when needed. The northwest region may be the exception, but even the great Columbia River flows through large expanses of semi-arid land.

Indian Irrigation

There is a lack of recorded history about the activities of American Indians in early irrigation. No records were kept and what we know today came from their memories and their practices which became tradition and then legend, and approached religious significance. Today, there are still traces of some of the early Indian irrigation systems in the western part of the United States, with the best examples found in the Rio Grande Basin in lower Colorado (Horgan, 1971). This, of course, is partly due to the warm climate for crop production and ease with which water could be diverted from the river in the low valleys and onto riparian lands. Horgan writes in his definitive exposition of the great river--the Rio Grande--that the ancient people of this part of the country looked for the most suitable places in which to live while becoming farmers. Realizing that their maize needed water, they located in the valleys and began making use of the water that flowed down from the mountains and formed the many streams and rivers. "When people could stay where they chose to stay, there was time, there was imagination, to improve their conditions of life" (Horgan, 1971, p. 15).

Prior to actually diverting the water from the river onto their fields, the early Indians would channel the diffused surface waters to their crops. When it was exceptionally dry, they would carry their water in jars and spill it around the roots. Over time, there were settlements along the river, and the river water was used to raise their crops. "Nearly 1,000 years ago, people were irrigating their fields through well-laid canals and ditches" (Ibid., p. 60).

The Colorado River and its tributaries, like other rivers of the West, has been used from time immemorial. Norris Hundley, Jr., has provided us with two of the most fascinating narratives on the Colorado River water legal and political issues, battles and solutions. His first book, Dividing the Waters (1966), gives the reader an interesting insight into the evaluation of a settlement on the Rio Grande, Colorado and Tijuana Rivers by the United States and Mexico. In Water and the West (1975), Hundley traces the background of the Colorado River Compact of 1922 and its subsequent impact on water users throughout the basin.

Frank Waters (1974) discussed in detail the early development along the Colorado River, providing an extensive insight into the development of the Imperial Valley. The Imperial Valley was the first large-scale private irrigation project to utilize the Colorado (Ibid., p. 325). Waters traces the development of irrigation projects on the Colorado, particularly the Colorado River Project in California.

The prehistoric pueblo dwellers utilized the Colorado River. Perhaps most famous of the early water users are the Hohokam Indians of Arizona and their construction of an extensive irrigation canal system. The city of Los Muertos predating Columbus' discovery of the western world was supplied with water from the Gila River by canals 30 feet wide and 7 feet deep (Waters, 1974). This canal has a network of laterals for irrigation. Similar developments took place on the Rio Grande River. "There were 30,000 people living in at least 30, perhaps up to 70, towns on the Rio Grande in Northern Mexico. They cultivated in all about 25,000 acres through irrigation from the river and its tributaries and by the use of controlled flood waters" (Ibid., p. 60). The Indians were religious, and consequently a very superstitious people. Horgan gives a very interesting account of the agricultural activities of these ancient people. He notes that the fields were laid in long, narrow strips with their ends touching the river so that each field had access to the river water. These farm lands were owned by the town, and the family's share was assigned by the use of its cacique's council (Council of Elders). Within this tribal system of community property, there was also the practice of appointing guards to watch over the fields. This was usually the older men who could no longer work at irrigating and cultivating (Ibid., p. 61). These guards had a lookout most strategically located in the field area, and from here he could observe if enemies or animals or other threats to the crops were approaching.

The Indians had a ceremonialism founded upon the reverence for the primary elements of life itself--earth, air, water, and the creative fire of the sun. They worshipped the "Mother Earth" and realized from it was their birth, life and special nourishment from the land, water and sun. Frank Waters states that this philosophy is not as simple and primitive as is supposed (Waters, 1974, p. xviii). Perhaps it is the realization of this same philosophy that is now the guiding principle in evaluating our resource use and misuse.

The Spanish Influence

In the 16th century, the agricultural life of the Indians was about to be drastically changed. The Spanish had landed in the Gulf of Mexico and with them came a more sophisticated level of agricultural practice, development and management. Colonies were established along the river bottoms, and there was an exchange of information between newcomers and the indigenous population. The Indians taught the Spanish, and the Spanish, in turn, showed the Indians new irrigation methods. In addition, the lands were being used more intensively than before, as the Spanish grazed their livestock in the areas around the irrigated fields. The most significant changes in the agricultural practices were introduced by the "desert fathers"--the Franciscan Friars. Their teaching involved almost all aspects of life from the introduction of new crops such as grapevines and fruits and vegetables, to the way in which the new orchards and fields could be irrigated from the river. These practices had been taught the Friars from their Mediterranean culture (Horgan, 1971, p. 229). Canals were constructed and in many instances stone irrigation troughs were hewn to convey the precious water to the fields.

This system of irrigation created a need for developing rules by which the farmers would share their water and the work necessary to maintain their delivery systems. In the spring, the irrigation ditches would be cleared of the winter stubble. Where a ditch served several families, the men from each family would come to do his share (*Ibid*., p. 368). During much of the time, water was plentiful and the farmers would use as much as they felt necessary to grow their crops. When it became more scarce, they would share their water, taking proportional reductions so that all families would at least have a minimum amount of food.

Widespread Settlement

Settlement throughout the West took place very rapidly during the 19th century. Large-scale irrigation projects were organized and supported by foreign capital, primarily the British. From Colorado to Texas and throughout California and Arizona, small river dams and canals carried water to fertile fields. Between Alamosa and Del Norte, a grid of irrigation canals reached out from the Rio Grande for 30 to 40 miles on both sides (*Ibid*., p. 889). The development of agriculture was just beginning to be appreciated, and a land boom resulted. There was a great deal of speculation and land values and water rights went wild. It was easily seen that there was not going to be enough water for all of the proposed uses in agriculture and mining in the many towns that were springing up all over the country.

The evolution of western water law is very closely tied to the history of land development. It is beyond the scope of this report to delve into the development of western land, for this has been done at great length by the Public Land Law Review Commission and definitively described by Gates and Swenson in *The History of Public Land Law Development* (1968). What is important, however, in appreciating the complexity of our western water laws is a brief exposition of the land development philosophy and of some of the major acts that encouraged the settlement and development of the West. The greatest impact on western land development goes back to the efforts of the

Federal Goverment to make lands available at little or no cost as an inducement to draw people from the East into the West.

One of the real problems in settling the West was the private land claims from those who had received grants from Spain, France and Mexico (*Ibid.*, Ch. 6). The laws of these countries were considerably different from those adopted in this country from the law of England. The conflict was not only with the land that was claimed, but as in the case of the Spanish and Mexican land grants, the water rights that were also tied to these grants.

An Act long forgotten and given little credit for many of the underlying reasons for present irrigation practices and landholdings is the Land Act of 1796. This Act made permanent the rectangular system of survey with townships six miles square. The townships were divided into 36 sections of 640 acres each and subsequently into quarter sections. The Act provided for a survey of public lands, and it was decided that certain of these lands would be sold at a rate of $2 an acre. The intent, of course, was primarily to raise revenue, and thus the responsibility for administering the land acts was given to the Secretary of the Treasury. Very little was done until 1812 when the General Land Office was created. This office remained in the Treasury Department until the Interior Department was created in 1849.

Following the Civil War, the United States began a new era of national development--building upon its industrial base in the East and expanding its utilization of resources in the frontier West. The contribution of these regions to the total economy during this period appears to have been confined almost wholly to development and utilization of the natural resource sectors, notably forestry, mining and agriculture. Rapid expansion of the railroad system was probably the most significant single contributing factor to national growth and development during this period.

If railroad expansion was the vehicle on which national development rode, public land policy was surely the engineer. As early as 1850, millions of acres of the public domain were granted to the Central States for the purpose of encouraging a railroad link between Chicago and the Gulf of Mexico. Similar land offers, sweetened by cash assistance, were made to encourage westward rail expansions. In addition to grants made to railroads, a series of Preemption Acts were passed between 1800 and 1891. These acts gave settlers on public lands a preferential right to purchase these lands at a modest price. It had always been understood that the early settlers had a right to preemption, but it was not explicit until the Preemption Act of 1830 (Statute 420). This Act gave all settlers or occupants of public lands the right to claim up to 160 acres including improvements at $1.25 acre. This enabled the land user to enter his claim within the year and avoid having to bid for the lands at an auction. From 1830 to 1854, numerous preemption acts were passed which varied the land which could be acquired from 40 to 160 acres. Although the preemption acts were severely abused and caused a number of problems for the bona fide or the well-intending settlers, the acts had a very significant impact in opening up thousands of acres to settlement. They deemphasized the sale of public lands for revenue and emphasized the efforts to develop the West. They made it easier for a bona fide settler to claim his land and avoid the hassle of auctions by giving him one full year to raise the money (Gates, 1968, p. 246).

Further encouragement of agricultural settlement in the West was provided by the passage of the Homestead Act of 1862, which entitled any person who was either the head of a family or 21 years of age and a citizen to enter claim on 160 acres of land at $1.25 an acre, or 80 acres at $2.50 an acre (Ibid., p. 394). Homesteading could only take place on surveyed lands, until 1880, when this restriction was removed. However, there were other conditions of use. The homesteaders had to swear that the lands were actually intended for settlement and cultivation, and that the entries were made by and for the homesteader himself. It also required a five-year residency on the land, and cultivation before title would be awarded.

During the time that the Homestead Law was being heavily advocated, there were also public land law grants. Congress was providing between 15 and 20 million acres under the Pacific Railroad Act. This amount was gradually expanded to a total of 127 million acres. In addition to the railroad acts, there were federal land grants to the states. Homesteading was made even more difficult, in terms of finding land, by the acreages allotted for Indian reservations. By 1862, there were 175 million acres designated as Indian reservations. The sad part of this history of American land law, however, surrounds the various dealings and treaties in which the Indian land was sold to railroads and other purchasers. Worse yet was the Dawes Act of 1887, which granted individual plots in fee-simple to the Indians. Being unfamiliar with the private ownership concepts, many lost or sold their allotments. By 1933, these reservations had been reduced in size to 50 million acres of some of the poorest land in the United States.

Not all early legislation was designed to encourage traditional farming. The Timber Culture Act of 1873 granted to settlers a third of a quarter section if they would plant the acres in trees and cultivate them. No residency requirements needed to be followed, and a thirteen-year land control period was allowed before the allotment would lapse. Of the 43.5 million acres entered under this Act, only 10,867 were ever granted a patent (Ibid., p. 400).

Up to this point in time, a settler could now enter upon 480 acres under the preemption acts, Homestead Act, and Timber Culture Act provisions, claiming land to be used accumulatively. Still, however, land was not being settled at the rate that Congress had hoped. In 1877, the Desert Land Act was passed. The philosophy of this Act was to encourage people to settle in the arid and semi-arid regions of the West. It was observed by many Congressmen that where a settler could divert water from the streams or build a small reservoir, the lands around the stream could be placed into production through irrigation. It was readily noted, however, that this activity would either require group action or considerable capital.

Under the Desert Land Act (Act of March 3, 1877, 19 Stat. 377), 640 acres of non-timberland could be acquired at the total cost of $1.25 per acre if the land was reclaimed for irrigation within a period of three years. The importance of the Act to the water law picture of the West was that it specifically granted water rights for the settled tracts. Even under this

Act, however, there was limited land ultimately patented. Out of the 32,803,914 acres entered upon, only 8,645,479 acres were ever patented under the requirements of the Act (Ibid., p. 401).

It was during the second half of the 1800's that emigrants and speculators in the West realized the value of water and water rights. The Public Land Law Review Commission noted that the Desert Land Act was abused from the outset by cattlemen and other people anxious to gain ownership of water rights.[2] The abuse of the Act was immediately seen, however. There were no strict requirements that water actually be conveyed from source onto the land through a water delivery system, and although the 640 acres had to be in a reasonably compact form, many of the entries zigzagged to take the very best soil and locations near the streams. By 1883, the abuse was so bad that there were Congressional threats to repeal the Act. The Act, however, did cause a considerable amount of economic activity in the Rocky Mountain states, and the governors of Montana, Wyoming and Utah felt that for this reason alone the law should be kept in force. Even Elwood Mead, the State Engineer of Wyoming at the time, and one of the chief architects of the federal reclamation policy, felt that the Act provided a most convenient means of acquiring title to land, although these settlements were both useful and injurious (Ibid., p. 641).

It was in the General Revision Act of 1891 that serious efforts were made to minimize the abuse of the Desert Land Act. After 1891, persons claiming land under the Desert Land Act had to present plans for irrigating the land including the location of canals and ditches projected and the source of water. Further, they were required to expend $1 per acre in each of the first three years for construction of the irrigation works and leveling of the land. Another provision that is extremely important was that the settlers were allowed and encouraged to associate together in planning the construction of the diversion and delivery systems. As a result of this feature, a great number of irrigation companies and associations were actually developed around the turn of the century. In addition to these requirements, the amount of land that could be settled was reduced from 640 to 320 acres, and the entrymen had to be residents of the state. Under the Desert Land Act, the law extended only to California, Oregon and Nevada and to the territories of Washington, Idaho, Montana, Utah, New Mexico, and the Dakotas. Colorado was excluded until 1891, when it was included under provisions of the Desert Land Act.

Some special remarks must also be made about religious factors which, in some cases, were of prime importance in settling the West. As a matter of fact, religion has provided the impetus or constraints in the evolution of many irrigation systems. When the Mormons settled the Utah Valley, farmsteads were grouped in villages rather than being scattered around the cropland as was common in the rest of the United States. Throughout Utah there remain early diversion dams, canals, irrigation and drainage ditches built and used on a cooperative basis as a community enterprise (Waters, 1974, p. 325). The cause, according to one analysis, was not defense of irrigation or any divine signs received by the church leaders, but rather "a sense of urgent need to prepare a dwelling place for the Savior at his imminent second coming" (Nelson, 1952, p. 28). Each of these villages built its own irrigation company which served the area around the community. To a large extent, the present pattern of many medium sized irrigation companies reflects this early development. The irrigation company became part of the community affairs; it was part of the cooperative endeavor of the village. Both village and church pressure could be exerted upon recalcitrant farmers in order to make the irrigation system operate smoothly (Hudson, 1962). The Mormons affected the pattern of land tenure by separating the farm buildings from the crop land. The idea of a unified farm which was common in the rest of the United States was weakened in the Mormon community.

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[2] The Preemption and Homestead Acts were originally much more applicable to the more humid East and Mid-East states.

Other factors, too, were positive in bringing about fragmented farms. The settlement in groups created local land shortages. The idea of self-sufficiency brought individual farms rather than communal farms. A doctrine of economic equality gave each farmer some of each type of land while large families caused further subdivision. The village form of settlement is more efficient socially than dispersed farm houses. Education, which is important to the Mormons, and the interchange of ideas is made easier while facilities such as domestic water supply can be provided more readily (Nelson, 1933, p. 26).

As a result of strong family ties which resulted from a village form of settlement, there has not been much migration of Mormons from Utah or even within Utah. This has resulted in the population of Utah being higher than it might have otherwise been. This, of course, has placed an extra burden on irrigation systems. Too, their group feeling has manifested itself in the church, which owns farms to help support welfare programs that the Mormons have for their own people of their own religion. In recent years the number of such farms has increased in Utah with a number of results, one of which is to move these farms from the tax burdens of the state and to increase the tax burden upon the other land. Their religion goes into great detail in establishing the relationship between man and water and the rest of the surroundings. The Mormons have a high regard for rural life. Nelson labels this "agrarianism" and defines it as "the assignment of superior values to the agricultural way of life." This has resulted in, especially in the early days, a large amount of labor being devoted to the development of irrigation systems with farm land projects requiring cooperative labor and, in many cases, postponement of immediate benefits. The Mormon Utah Valley is a prime example of how a religion can directly affect the development of irrigation practices. This religion places a high value on farm life, and by virtue of its emphasis on living close together, farms were large and unified. Therefore, irrigation practices moved quickly along this valley from almost immediately passing over the small farm to large-scale irrigation.

Large-Scale Development

The problems of agricultural development west of the hundredth meridian were considerably different from those of the East and Mid-West--erratic rainfall patterns and problems of water availability in general created considerable hardships for increasing numbers of western settlers. A great drought, beginning in 1887, lasted for five years. During this period, over eleven thousand farm foreclosures were registered in Kansas alone, constituting up to three-quarters of the farm land in many counties. "In God we trusted, in Kansas we busted" was a popular epitaph to the dead dreams of those settlers returning to the East. The crisis reached disaster proportions when a general depression in the early 1890's sent agricultural prices plummeting. Once the bright promise of individual fortune, the West was beclouded with all but rain (Dickerman, Radosevich and Nobe, 1970).

In the 1870's, many major agricultural settlements began to irrigate on a cooperative basis, notably at Greeley, Colorado and in California at Anaheim and Riverside. The enthusiasm and conflicts over water led Colorado to adopt the first water law in 1876. By 1880, other western farm lands were being cultivated with the assistance of irrigation water, much of this land being in river bottom areas watered by small diversion ditches. The 1880's saw considerable expansion in privately organized irrigation projects and somewhat of a speculative "boom" in the financial obligations of water companies. The first official census of irrigation covered the year 1889 and reported 3,631,381 acres of irrigated land in the western states. By 1890, the Federal Government's role in irrigation had become one of the many topics clamoring for national attention while the decade of the 1890's was a period of readjustment and reevaluation of national objectives and policy goals.

By the turn of the century, proponents of irrigation were beginning to agree that the Federal Government should take a more active part in irrigation development. A series of annual irrigation congresses, comprised of individual water users and officials of both state and national stature, had been meeting throughout the 1890's to discuss the issues of reclamation and to suggest policy guidelines. The Ninth National Irrigation Congress, which met in Chicago in 1900, adopted resolutions very similar to the policy prescription advocated by Captain H. M. Chittendon in an 1897 report on Reservoirs in the Arid Region. In that report, Chittendon not only had called for government ownership of sites and water rights, but also for government construction and operation of irrigation works and for free distribution of water. Western Congressmen saw federal irrigation during the 1890's as one of the few opportunities for federal assistance to their region.

President Roosevelt was very interested in reclaiming the West, and with the support of Congressmen like Newlands, Harnsberger and Clark and Mr. Newell, Senate Bill 3057 was introduced. The bill and amendments passed the House on June 13, 1902 by a vote of 146 to 55, with 150 representatives not voting. It emerged as the "Reclamation Law," with most of the major provisions set forth by its authors still intact. The Act created a "revolving" reclamation fund into which all proceeds from sale of public lands were to be placed. This fund was so designed that, in theory, constructed reclamation projects would be paid for in annual installments by the farmers, and this money in turn would be used to finance construction of future projects. Costs for services rendered were to be borne by those benefitted. Initially, the time limit for repayment was set at 10 years, then extended to 20 years in 1914 (Reclamation Extension Act of August 14, 1914, 38 Stat. 686) and to 40 years in 1926 (The Omnibus Extension Act of May 25, 1926, 44 Stat. 636, Sec. 45). An initial

10-year development period for repayment after project completion was allowed in 1939. Money expended on projects was not to bear interest on repayment. Authority to locate and construct irrigation works was given the Secretary of the Interior. Property required to carry out the purpose of the Act could be acquired either by purchase or through condemnation proceedings. The Secretary, however, was required to act within conformity to state laws relating to water.

A safeguard to prevent monopolization and speculation from the Act was inserted: "No right to the use of water for land in private ownership shall be sold for a tract exceeding 160 acres to any one landholder, and no such sale shall be made to any landowner unless he is a bona fide resident of such land...." The Adjustment Act of 1926 relaxed the original 160-acre limitation by permitting a landowner a reasonable time to sell excess acreages at a price satisfactory to the Secretary (Ibid.).

Section 3 of the Act provided that the Secretary of the Interior shall withdraw lands required for irrigation projects and land susceptible to irrigation from such projects from public entry. The effect of this section was to prevent entry and claim to the land under land settlement laws (Donley v. West, 189 P. 1052, 1920), or timber and stone laws (Board of Control, Canal No. 3, State of Colorado v. Torrence, 322 L.D. 472, 1904). It did not mean that use of the land was restricted to irrigation or construction of irrigation works. For example, the Secretary of the Interior could lease out the lands for grazing (Clyde v. Cummings, 35 Utah 461, 101 P. 106, 1909), provide for removal of sand and gravel for private use (Department Decision, April 13, 1929, Boulder Canyon Project), or provide for other purposes which would not interfere with the intended use of the land (Departmental Decision, 342 L.D. 480). This policy in time evolved into the familiar multiple-use concept still prevalent today. The provisions of the Reclamation Act clearly emphasized Congress' primary objective of encouraging development of western lands. Its legal framework has served as the cornerstone to the nation's reclamation objectives.

The Reclamation Act of 1902 has been amended numerous times over the years to expand the program initiated under the original Act to include multipurpose projects, changes in the repayment program and streamline the orientation of the agency. In 1923, following the Tea Pot Dome Scandal, President Harding's new Secretary of Interior reorganized the Department of Interior and created the Bureau of Reclamation in the place of the Reclamation Service. The Reclamation Service was not associated with the scandal, but a change was considered important to the success of the program.

As of 1932, the Bureau's basic objective was community development of rural areas through provision of low-cost irrigation water to farmers and generation of power for municipal and industrial uses to subsidize a large portion of the irrigation project costs. Conservation and water supply to municipalities were added to the reclamation purposes during the 1930's and 1940's, along with the continual development of irrigation projects around the West. Most of these projects are constructed by the Bureau and after a period of time--usually ten years--the operation is turned over to the local irrigation district that was formed to enter into the repayment contract with the government (see Dickerman, Radosevich and Nobe, 1970, for detailed history of the Bureau, and Pelz, 1972, for Reclamation laws annotated).

Water planning and development was given an additional boost in 1956. The Small Reclamation Project Act (Small Reclamation Projects Act of August 6, 1956, PL 84-984, 70 Stat. 1044) was enacted to establish a program under which state and local organizations could obtain loans and grants for construction of projects with an estimated cost that did not exceed $10,000,000. This Act provided that the maximum amount of the loan and grant for any individual project could not exceed $5,000,000, which was increased to $6,500,000 in a 1966 amendment. This Act, administered by the Secretary of the Interior through the Bureau of Reclamation, extended the Bureau's scope of operation into a "federally assisted projects" area. Concurrently, the Soil Conservation Service of the Department of Agriculture was authorized to provide federal grants for this type of project through the Watershed Protection and Flood Prevention Act (PL 566). In addition to the Bureau and the SCS, U.S. Army Corps of Engineers, Forest Service, Department of Agriculture, Bureau of Land Management, National Park Service, Bureau of Sport Fisheries and Wildlife, and Bureau of Indian Affairs have been involved at various stages and levels in water planning and development in the West. In fact, Lieberman (1972, p. 1) reports there were as many as nine federal departments, seven independent agencies, five offices and councils in the Executive Office of the President, and nine federal-state commissions involved in water resources activities across the country in 1972.

Much of the contemporary involvement of federal and state activity in water planning was brought about by the Water Resources Planning Act of 1965 (PL 89-80, 79 Stat. 244, 42 U.S.C.A. 1962, July 22, 1965). This Act declared it to be the policy of Congress, in an effort to meet the rapidly expanding demands for water, to encourage conservation, development and utilization of our water resources on a comprehensive and coordinated basis by federal, state and local agencies and entities and individuals (Ibid., Section 2). It called for the creation of a Water Resources Council, river basin commissions and financial assistance to states so they could undertake comprehensive planning activities (Ibid., Titles I, II and III, respectively). As a result of this federal policy, there has been a tremendous volume of material produced for the Water Resources Council by federal and state comprehensive and state water planning efforts.[3]

As previously stated, many states have created separate planning and development agencies to carry out planning and develop state water resources (i.e., California Department of Water Resources, Colorado Water Conservation Board, Utah Division of Water Resources) (Radosevich and Skogerboe, 1978). The result of this very complex and sophisticated arrangement of local, state and federal organizations dealing with water for irrigation purposes has made the task of adding a new element of control to a well-structured system very difficult. At the regional and local levels, a main entity often operates the storage facility and distributes water directly or through a host of subordinate organizations to users.

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[3] For a thorough discussion of the Act, its history and accomplishments, see Hart, 1972; Lieberman, 1972; The Nation's Water Resources, 1968; and History of the Implementation..., 1969.

SUMMARY

The period of individual development of water supplies, except from some ground water areas, is now part of nostalgia. Our rivers and streams have become highly organized, and in most states, the waters from seasonal flows are overappropriated. The magnitude of water supply problems has crept up the hierarchy from the intrastate concerns in local areas to subbasins and have reached the interstate regions and basin levels. In several instances, the problems have even reached international dimensions. The maturing from small- to large-scale water planning and development has been a very important process in our history, which in itself partly explains the problems we currently face in attempting to control the quality of irrigation return flows. In 1948, Charles Brannan, Secretary of Agriculture, noted that "if irrigation is to contribute the fullest possible benefits, water supplies now flowing unused to the sea must be developed. Also, the wastage of water through canal seepage and improper irrigation practices must be reduced...it calls for more efficient conveyance of water to the land, and for use of this water on productive lands by the best known methods of application" (Irrigated Agriculture In the West, 1948).

But, irrigated agriculture has played and is still playing an extremely important role in the development of the West. Without the application of water, these arid lands were usually worthless. Hence, development depended upon the availability of a water supply. Where an adequate supply and climatic conditions conducive to irrigated crop growth existed, settlements grew. The Federal Government, having adopted a policy of encouraging western growth in the late 19th century, contributed greatly to the rapid increase of the agricultural sector.

With agricultural development, there also followed population increases with eventual urban, industrial and recreational encroachments which have placed even greater constraints on the existing water supply, thereby requiring a more conscious use of this valuable resource. However, the irrigation systems and agricultural communities have grown accustomed to an untampered use of their water; storage and conveyance facilities, which have been constructed and the associated costs repaid, are deemed sufficient for the needs of the particular communities, despite conflicting demands for other uses.

It is worth noting, too, the special attitude toward water prevalent in the western United States. Water is regarded as a scarce resource and is treated as such. Innumerable disputes and differences over water have resulted in a highly complex system of water rights based upon case law, interstate compacts, and legislation. Central to this is the tradition of the states to develop and control their own water and, hence, shape their destinies as may be limited only by the availability of water.

No attempt has been made, of course, in the few preceding pages to present a comprehensive history of water resources development in the western United States. The cursory examination of some of the conditions of development in the region was needed in order to reemphasize the point that water in the arid West remains a central point of concern and a sensitive issue, reinforcing a widely shared conviction about the need for control and coordination and repeating the truism that "water and land in the West are inseparable."

SECTION 5

STATE WATER ALLOCATION LAW

RISE OF A FEDERAL SYSTEM OF WATER LAW

Water law in the United States is a "federal" system with a delineation of jurisdiction over water at the national and state government levels.[4] Federal water law is uniform and nationwide with regional flexibility in the implementing agency regulations. But each of the fifty states adopted quantity control of surface and ground water laws with significant variations. State water quality control laws are more uniform, however, and follow a pattern set by federal legislation.

To understand the rise of a federal system of laws for allocating and diverting water, it is again necessary to look at the land settlement practices adopted when the country was founded. Private landholdings in most states can be traced to the public land system developed after the Revolutionary War (1775). To form a union, the Thirteen Original Colonies on the eastern seaboard ceded their claims west of their boundaries to the national government. Subsequently, the national government encouraged settlement and reclamation of these lands through private ownership by disposing of large tracts at nominal prices. Substantial acreages were also granted new states for: 1) settlement under private ownership; 2) revenue base through land leases; and 3) dedication of parcels within towns and communities for a common school system (One Third..., 1970, p. ix). One-third of the nation's land remains in public or federal ownership for parks, forests, wildlife preserves, and other uses in the public interest, with the remainder under private ownership.[5]

The initial federal water policy was directed to controlling navigable waterways for commerce and defense, regulation of power facilities and flood control. Water was abundant in the East, so no involvement beyond these measures was needed. Water quality was no problem, but if commerce was adversely affected, the reserved powers were broad enough to exercise jurisdiction. With no guidelines or policies to follow or abide by, the eastern states adopted the common law riparian doctrine of England as a policy for controlling the waters of the states.

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[4] This is in contrast to the "national" system of water law found in Mexico, Spain, etc., in which the central government has complete jurisdiction over the resource and delegates authority to states or provinces for limited control.

[5] All states from North Dakota to Texas and east contain from 0-20 percent of federal land; Colorado, Montana, New Mexico, and Washington contain 20-40 percent; Arizona, California, Oregon, and Wyoming contain 40-60 percent; Idaho and Utah contain 60-80 percent; and Alaska and Nevada range from 80 percent upward in federal land (One Third..., 1970, p. 23).

To carry out the land settlement and development policy of the West, the Federal Government enacted many laws which not only made land available for private ownership, but recognized and granted water rights for these lands. The three most important acts are Mining Act of 1866, Land Act of 1870 and the Desert Land Act of 1877. They acknowledged the validity of water rights created by local customs, laws and court decisions, and declared all unappropriated water would remain subject to "appropriation and use of the public for irrigation, mining and manufacturing purposes subject to existing rights" (Desert Land Act of 1877, 43 U.S.C., Sec. 321, 1964).

The Federal Government's water resources policies have gone through various stages, beginning with a general laissez faire attitude of federal involvement supplemented by incentives for private development, to government involvement in planning and development of medium- to large-scale projects and, finally, to the present stage of national and regional management and development influence through incentives or regulation. States have gone through a similar policy metamorphosis, except their role has been more directly involved in policy formulations pertaining to the allocation, reallocation and distribution of waters within their borders. Based upon the Federal Government's recognition of local laws, the western states developed rules according to their particular needs. From this policy the doctrine of prior appropriation evolved and the basic principles were adopted by nearly every western state.

STATE WATER LAW SYSTEMS

In early American history, water--like air and open space--was considered a common or free good with nearly unrestricted use due to minimal demands on existing supplies. But as the effects of use were felt and conflicts arose, the need for control along systematic lines was recognized.

It is commonly held that waters arising within a state's boundaries are under the jurisdiction of the state, unless subject to powers reserved by the Federal Government.[6] Consequently, as local customs developed and states were formed, each state adopted its own particular system of water law. At first, surface water allocation and control was addressed, then gradually as ground water was used, laws directed to its use were added to the statutes.

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[6] Recently, the U.S. Ninth Circuit Court held in U.S. v. Cal. that state water laws were superior to federal involvement except that such laws could not interfere with the construction and operation of federal projects (9 E.R.C. 2062, 1977).

Surface water laws developed along two distinct philosophies which were consistent with the geo-climatic condition of the state. In the humid eastern half of the country and along the west coast, the riparian doctrine was adopted. The more arid western half of the country was faced with an immediate problem of deciding how to allocate a scarce resource and thus was compelled to develop a system of law peculiar to arid lands. The result of trial, error and compromise is the doctrine of prior appropriation. Some states have a varied water availability and concluded by adopting a mixed riparian/prior appropriation system. Figure 3 identifies the general system each state currently operates under. Despite the classification of state systems into these three groups, there is a wide variation between states following the same doctrine as to the manner for determining water rights, exercise of the right, water use efficiency criteria, interpretation of beneficial use, and system for obtaining water rights and administering and enforcing the law.

Ground water legislation occurred much later in the states due in part to the lack of knowledge of subsurface supplies and in part to adequate surface sources. The basic principles for use and control followed the surface doctrines, but again each state adopted and modified the law to fit its perceived needs. Four different systems of control emerged. Figure 4 identifies the doctrines and their adoption by the states.

These laws were developed to solve particular problems on a sectorial basis, thereby leading to a lack of uniformity of policy and guidelines within the state as well as among the states. For example, traditional western water law was designed first to insure the miners of a water supply. Shortly thereafter, agriculture became the dominant sectorial interest greatly influencing the law's growth. Without reshaping the contemporary system of the early 1900's, municipal and industrial users were granted privileges and rights under the law.

The system of water law and administrative mechanism of these western states can be classified as "use-oriented"--the dominant objective being to utilize the water to produce an economic gain, which to many meant a livelihood and to others a profitable venture.

As a consequence of the erratic and sporadic nature of the evolution of western water laws, contradictions arose between the surface and ground water doctrines and between the rights and privileges designated for various uses of water, thereby creating doubt and frequent hostility among users and among states sharing a common stream, lake or underground body of water. The following subsection discusses the important features of the law of water allocation and use in the western states. Table 1 provides a summary of the law for each of these seventeen states. For a further elaboration of each state's water laws as summarized here, refer to the state reports found in Appendix A and the appropriate section of the report outline provided in Section 1.

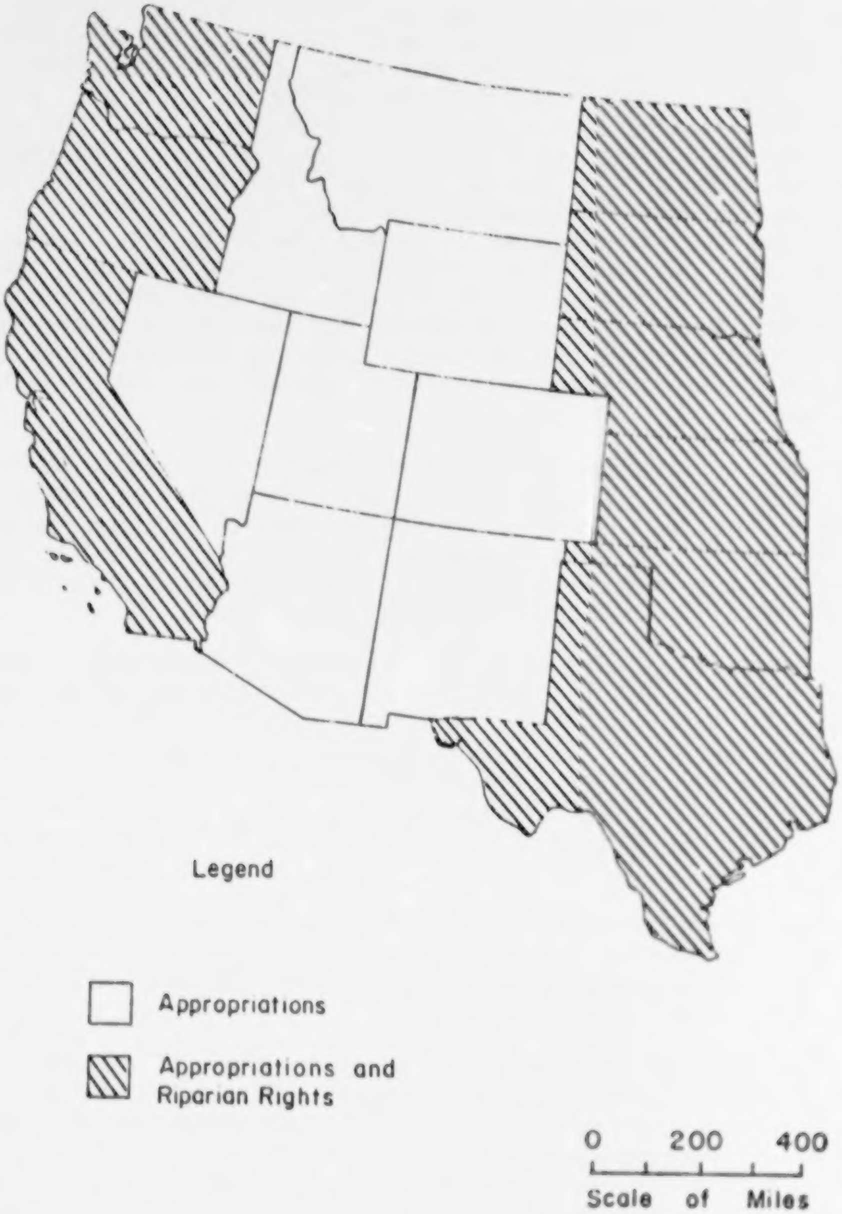
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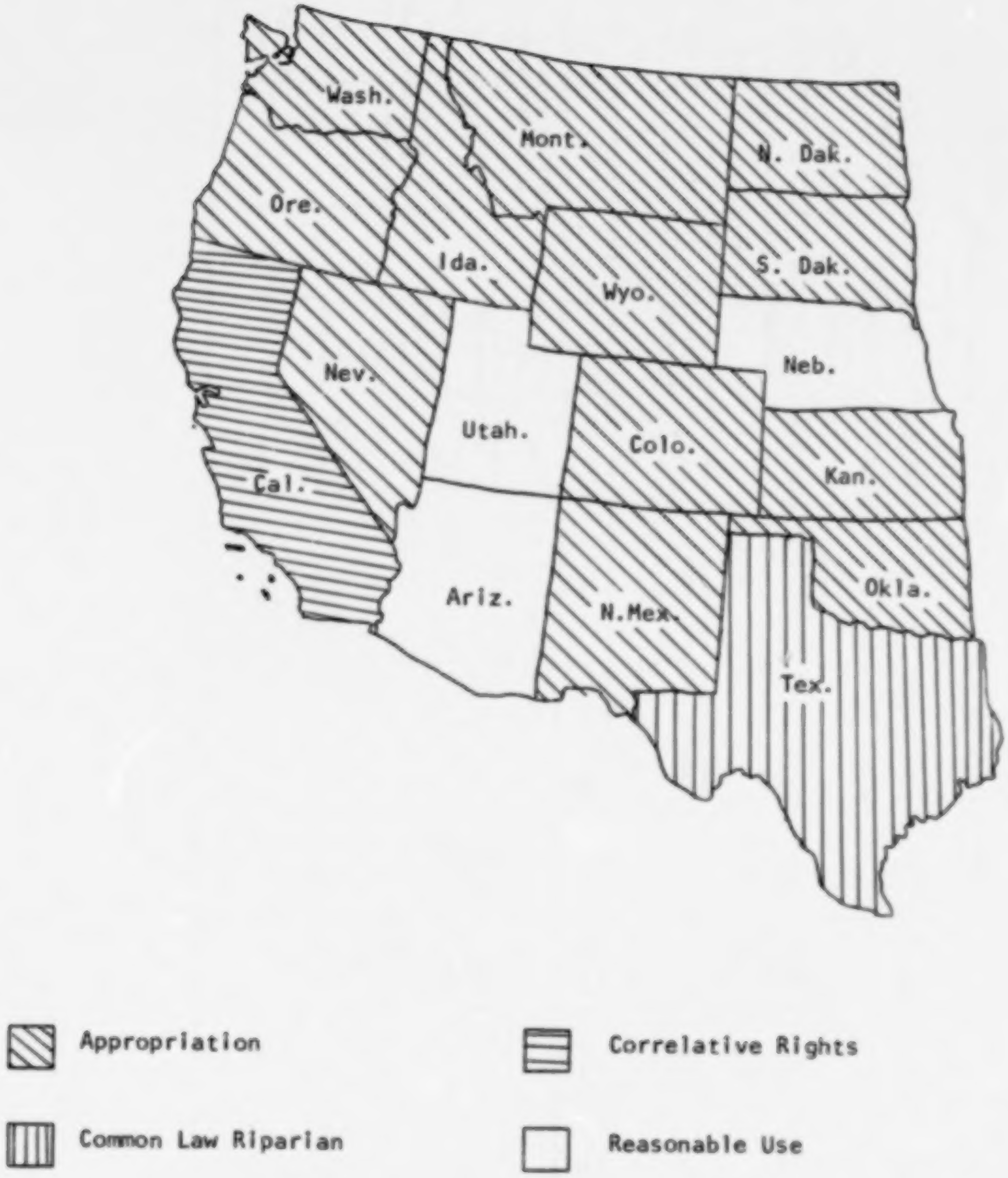
Figure 3. Surface water law systems in the western states.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Cal.
Okla.
Ariz.
N.Mex.
Tex.
Appropriation
Correlative Rights
Common Law Riparian
Reasonable Use

Figure 4. Ground water law systems in the western states.

TABLE 1: A SUMMARY OF WESTERN WATER LAW

Legal Feature	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	WATER LAW DOCTRINES													
State	Surface Water	Ground Water	Ownership	Evidence of Water Right	Basis of Allocation	Criteria of Allocation	Preference of Use (Order)	Date of Priority	Appurtency	Water Rights Registry	Water Quality In Rights	Forfeiture of Rights^{5}	Drainage Rules	Basin of Origin
1-ARIZ	P.A.	R.U.^{2}	Public	Permit	B.U.	B.U.	1-2-3-4-5	D.O.A.	Strict	Original	Case	5 yrs	C.E.& C.L.^{7}	
2-CAL	P.A.&R.	C.R.	People	Permit^{3}	B.& R.U.	B.& R.U.	1-2--	D.O.A. post 1914	Unlimited	Current	Case + Statute	5 yrs < 1914 3 yrs > 1914	Yes	
3-COLO	P.A.	P.A.	Public	S.W.- decree G.W.- permit	B.U.	B.U.	1-2 over 5	S.W.- 1st step G.W.- D.O.A.	None	Original (computerized)	Case	--^{6}	C.L. (modified)	Yes
4-IDA	P.A.	P.A.	State	License	B.U.	1cfs/ 50 a.	1-2^{4}	D.O.A.	Unlimited	Current (Limited)	Case	5 yrs	C.L.	
5-KAN	P.A.& R.^{1}	P.A.	People	Permit	B.U.	1 to 2 a.'/a.	1-2-5-6-3	D.O.A.			Case + Statute	3 yrs	C.L.	
6-MONT	P.A.	P.A.	State	Permit	B.U.	1 miners "/a.	None	D.O.A.		Original (Limited)	Case	--^{6}	C.E.	
7-NEB	P.A.& R.^{1}	R.U.^{2}	Public	Permit	B.U.	1 cfs/70a. or 3 a'/a.	1-2 over 5	D.O.A.			Case	3 yrs	C.E.	Yes
8-NEV	P.A.	P.A.	Public	Permit	B.U.	Conditions & Needs	None	D.O.A.		Original	Case	5 yrs	C.L.	
	P.A.=Prior Appropriation R=Riparian A.O.=Absolute Ownership R.U.=Reasonable Use C.R.=Corrective Rights ^{1}All new water by P.A. ^{2}Lack comprehensive ground water laws.			^{3}Different types ^{3a}Not for <1914 rights, riparian rights & percolation ground water.	B.U.=Beneficial use. B.& R.U.= Beneficial & Reasonable Use		^{1}Domestic & Municipal ^{2}Agricultural (irrigation) ^{3}Power ^{4}Mining ^{5}Mfg.& Industrial ^{6}Recreation ^{7}Navigation ^{4} In mining districts, 4 over 2 & 5	D.O.A.= Date of application D.B.U.= Date of beneficial use	Strict= can transfer but criteria established Limited= water right for specific parcel, but transferable	Original= Initial filing recorded Current= User must notify agency of name, use, place, etc., transfers unlimited		^{5}All states recognize loss by abandonment ^{6}10 yrs is evidence of abandonment	C.E.= Common enemy C.L.= Civil Law R.D.= Reasonable discharge ^{7}C.E.= flood waters C.L.= natural flows	

TABLE 1 (continued): A SUMMARY OF WESTERN WATER LAW.

Legal/ Feature	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	WATER LAW DOCTRINES													
State	Surface Water	Ground Water	Ownership	Evidence of Water Right	Basis of Allocation	Criteria of Allocation	Preference of Use (Order)	Date of Priority	Appurtency	Water Rights Registry	Water Quality in Rights	Forfeiture of Rights[5]	Drainage Rules	Basin of Origin
9-N.M.	P.A.	P.A.	Public	Permit	B.U.	B.U. & good agr. practices	None	D.O.A.		Original	Case	4 yrs + 1 yr after notice	C.L.	
10-N.D.	P.A.	P.A.	Public	Permit	B.U.	1 cfs/ 80 a.	1-2 & 5-6	D.B.U.			Case	3 yrs	R.D.	
11-OKLA	P.A.& R.[1]	P.A.	--	Permit[3]	B.U.	B.U.	None	D.O.A.	Strict	Current	Case	7 yrs	R.D.	Yes
12-ORE	P.A.& R.[1]	P.A.	Public	Permit	B.U.	B.U.	1-2-4--	D.O.A.	Strict	Original	Case	5 yrs	C.L.	
13-S.D.	P.A.& R.[2]	P.A.	People	License	B.U.	1 cfs/ 70 a. or 3 a.'/a.	1--	D.O.A.		Original	Case	3 yrs	C.L.	
14-TEX	P.A.& R.[1]	A.O.	State	Permit[3]	B.U.	B.U.	1-5-2-4-3-7-6	D.B.U.		Current	Case	10 yrs	C.L.	Yes
15-UTAH	P.A.	P.A.	Public	Permit	B.U.	Nature of Use	1-2	D.O.A.		Current	Case	5 yrs	C.E.	
16-WASH	P.A.& R.[1]	P.A.	Public	Permit	B.U.	Reasonably Necessary & B.U.	None	D.B.U. & D.O.A. for permits		Current (Computerized)	Case	5 yrs	C.E.	
17-WYO	P.A.	P.A.	State	Permit	B.U.	1 cfs/ 70 a.	1-5	D.O.A.	Strict	Original	Case	5 yrs	Undecided	
	P.A.=Prior Appropriation R.=Riparian A.O.=Absolute Ownership R.U.= Reasonable Use C.R.=Corrective Rights [1]All new water by P.A. [2]Lack comprehensive ground water laws.			[3]Different types [3a]Not for 1914 rights, riparian rights & percolation ground water.	B.U.=Beneficial use. B.& R.U.= Beneficial & reasonable use.		[1]Domestic & Municipal [2]Agricultural (Irrigation) [3]Power [4]Mining [5]Mfg. & Industrial [6]Recreation [7]Navigation [4] In mining districts, 4 over 2 & 5.	D.O.A.= Date of application. D.B.U.= Date of beneficial use.	Strict= can transfer but criteria established. Limited= Water right for specific parcel, but transferable.	Original= initial filing recorded recorded. Current= User must notify agency of name, use, place, etc., transfers unlimited.		[5]All states recognize loss by abandonment. [6]10 yrs is evidence of abandonment.	C.E.= Common enemy. C.L.= Civil Law R.D.= Reasonable Discharge. [7]C.E.= flood waters; C.L.= natural flows.	

SURFACE WATER LAWS

As previously stated, the seventeen western states have adopted one or both of the basic water law systems found in the United States. The system adopted by every western state is the doctrine of prior appropriation, with those states on the western seaboard and from North Dakota to Texas also employing the riparian doctrine to lands adjacent to watercourses. There is a definite trend to eliminate the riparian doctrine as demand on surface water increases. For all practical purposes, most of the states with both doctrines have relegated the riparian system of surface water control to an insignificant role. However, a brief explanation of the doctrine's salient points will enable the reader to recognize the attitudes and drawbacks in efforts to control the quality of irrigation return flows.

Riparian Doctrine

Two Rules--

The water laws of the humid states were patterned after the early common law of England. Under English law, every landholder whose property was adjacent to a stream or body of water was entitled to have the water flow past his land (or maintain a natural lake level) undiminished in quantity or quality. This rule is generally called the natural flow theory.

In a water-abundant area with little withdrawal needs, this rule may be satisfactory. But, even in the humid parts of the United States, conflicts developed as emerging industries, municipalities, and agriculture began diverting water. To resolve the problem, the American Rule of Reasonable Use came into being. Under this rule, riparian landowners can divert a reasonable amount of water with respect to all other riparians on the stream, and non-riparian lands may, under certain conditions, make a reasonable use of the available waters.

Nature of the Riparian Water Right--

Waters in states following the riparian doctrines are a public resource, held in trust for use by the people of the state. Thus, a landowner whose land borders a stream does not have an ownership right to the waters of the stream, but rather has a fundamental right by virtue of his land location to a reasonable use of the water and to be free from unreasonable uses of others that cause him harm (Rancho Santa Margarita v. Vail, 11 Cal. 2d 501, 81 p.2d 533, 1938). He is essentially a correlative co-user with all other riparians on the water source and as between riparian uses, priority of use does not establish priority of right in times of decreased flows (Pabst v. Finland, 192 Cal. 124, 211 P.11, 1922). Consequently, his right to the use of water is not a right for a fixed quantity of flow or volume,but rather is dependent largely upon the extent of development that has taken place.

Manner of Allocation--

Fundamental to the riparian law is the location of land on a water source. Although this requirement has been relaxed in many eastern states to permit use of water on nonriparian lands--as between riparians and nonriparians --water will first be allocated to the riparian landowner. Among the western states, California remains the one state in which the riparian right doctrine has major significance. In California, a riparian right can only be established upon riparian land. And, if a portion of the land to which a riparian right attached is severed from the original parcel, and itself does not have access to the watercourse or the riparian right is not specifically reserved for the portion, then the right is lost and cannot be restored.

More important to the allocation of water under this doctrine is the requirement of reasonableness in use, since the right does not consist of a definite quantity or quality of water. A definition of reasonableness that is often cited for its completeness states:

> In determining what is a reasonable use, regard must be had to the subject matter of the use; the occasion and manner of its application; the object, extent, necessity, and duration of the use; the nature and size of the stream; the kind of business to which it is subservient; the importance and necessity of the use claimed by one party; the extent of the injury to the other party; the state of improvement of the country in regard to mills and machinery, and the use of water as a propelling power; the general and established usages of the country in similar cases; and all the other and ever-varying circumstances of each particular case, bearing upon the question of the fitness and propriety of the use of the water under consideration.
>
> ...each use is required to be beneficial, suitable to the watercourse and of economic and social value. If these requirements are met, reasonableness may require each riparian to put up with minor inconveniences and to adjust to quantity of water used. (If conflict occurs, a solution involves consideration) of whether the first user's investment and other values are entitled to protection and whether the new user ought to compensate the former user for the loss of that which the latter gained. In most of the cases in which the plaintiff has suffered substantial harm through his water supply for a reasonable use being taken, the decision has been that the taking is unreasonable... (Restatement of Torts, 2nd, Ch. 41, Topic 3, "Scope Note," Tentative Draft No. 17, 74-76, 1971).

In essence, the reasonable use requirement limits the use of water to that quantity reasonably required for a beneficial use and prohibits waste or unreasonable use, or unmeasurable methods of use, or diversions (Const. of Cal., Art XIV, Sec. 3).

Other rules on allocation and exercise of riparian rights include restrictions against transfer of riparian rights to nonriparian lands, water cannot be stored for later use under a riparian right (Moore v. California-Oregon Power Co., 22 Cal. 2d 725, 140 P.2d 798, 1943), nor can foreign waters be claimed under a riparian right (Crane v. Stevinson, 5 Cal. 2d 387, 54 P.2d 1100, 1936). As a general rule, riparian rights can only be used within the watershed.

As concluded by Davis in his study of riparian law for the National Water Commission, the law "presents a process for reaching allocative decisions but does not offer clear principles for allocation" (Davis, 1971).

Preference of User--

Under either the natural flow or reasonable use theory, there is a preference for the "natural wants" over all other uses. The "natural wants" include household and limited livestock needs and have generally placed domestic-called uses in a preferred position. As between other uses--agricultural, industrial, recreational, etc.--there is no clear preference but rather the courts have looked upon the reasonableness of use to determine conflicts between these uses.

Nonuse and Misuse of Rights--

Riparian water law does not require a landowner to use the water in order to maintain the right in good standing. Unless the right to use water from an adjacent water source has been sold or transferred to other lands or uses, the right will continue as long as the land and water are continuous. Abandonment of water right is nonexistent under riparian law. There is a possibility, however, that a riparian who does not object to the open and notorious use by another, through prescription, may have his right reduced or lost. Misuse of the right may result in a restriction on use and/or judgment for damages to those adversely affected. Parties injured through the misuse must assert their claim in court.

Statutory Modifications--

There have been a number of significant recent changes in the water law of the riparian states, primarily brought about by the inability of existing water supplies to meet the expanding demands on one side, and a recognition of public interest in water resources on the other. The changes can be summarized into two major components: 1) establishment of a permit system to allocate water among certain users; and 2) creation of administrative machinery to assess water supplies and requirements and to allocate and manage the states' water resources through the permit system.

The most creative aspect of the permit system in riparian states is the limitation on the duration of the right to use. For example, the State of Iowa grants a ten-year permit, renewable upon a showing of continued beneficial use, and without any temporal priority between permit holder (I.C.A., Ch. 455A, 1968 Supp.), and New Jersey grants a permit long enough to allow amortization of capital investments, but not over 25 years (N.J.S.A., Sec. 58:1-44).

The advantages of the permit system are numerous, but generally it allows conditions of use to be stipulated in the permit and provides the state water agency a data base on where, to whom, what for, and what quantity water is allocated. Other changes include forfeiture provisions for nonuse (three years is common), minimum flow requirements for fish, wildlife and recreation, and greater flexibility and certainty in acquiring right to use water.

Among the western states, the modifications to the original doctrine are strongly influenced by the simultaneous application of the doctrine of prior appropriation, increased demands on surface supplies for in-basin as well as out-of-basin use stimulated in part by large-scale reclamation projects, heavy reliance upon ground waters in some states (i.e., California, Nebraska, Oklahoma, and Texas). In all of the dual-doctrine states except California, all new claims to the use of surface waters must comply with the statutory requirements of the prior appropriation doctrine. In Texas, all surface water rights are now required to be filed, approved and administered by the Texas Water Rights Commission. Prior to 1967, riparian rights could be maintained by virtue of land location adjacent to a body of water, without notice of claim by posting or filing such claim with the state agency. In 1967, the Water Rights Adjudication Act was adopted which requires all riparian right claimants to file their claim with the Texas Water Rights Commission, or the right would be extinguished (T.C.A., Sec. 5.301 to 5.341). If the Commission desires, it may also adjudicate these claims.

Similarly, in Washington, under the 1969 Water Right Claims Act, riparian and pre-1917 appropriation water right claimants must file a statement of their claims in order to protect their interests against relinquishment of right, title or interest in such rights (W.R.C., Sec. 90.14.071). In California, if a suit involving the determination of water rights is brought in the superior court, the court can refer the case to the State Water Resources Control Board for a determination of all water rights in the stream system (C.W.C., Sec. 2000 and 2001; C.W.C. Sec. 2500 to 2900 sets out the procedure).

Regarding Irrigation Return Flow--

The riparian doctrine has as an inherent component the requirement that a riparian user make a reasonable use of the water and his right shall not be impaired in quantity or quality by the unreasonable use of another riparian. Thus, in theory, if the upstream riparian's return flows were degrading the quality of the water used by a downstream riparian, the latter has a basis for judicial redress. It must be pointed out that under the riparian system, an administrative structure for allocation and regulation of water does not exist (except in those western states where riparian claimants are required to file their claim or obtain a permit) and, thus, the injured party must rely upon the courts through a private lawsuit.

Doctrine of Prior Appropriation

Origin and Principles--

The appropriation doctrine is a water allocation system which was developed in response to the geographic characteristics found in most of the western United States. Though there were some small agricultural experiments during the era when this land was being opened to settlement, the first major users of water were the legendary gold and silver miners. Some experts of early western water law maintain that it was these individuals who adopted the principles on which this doctrine is based from their practices and rules of conduct (Trelease, 1971, p. 22).

It was obvious to these people that the riparian water law under which they had lived in the water-wealthy eastern United States would not provide a workable system in the arid western region. However, they were not learned in the law and were forced to find a solution to their problem. In response, they applied the same principle to the use of water as they did to staking mining claims. The person who first discovered a mine was protected against all later claimants. For the use of water, this was translated into the doctrine of prior appropriation, or "first in time is first in right," i.e., the first person to use water acquires the right to its future use as against later claimants (Carlson, 1974, p. 530).[7] The evolution of this doctrine was a fortunate event for it proved equally useful for agriculture. As mining became more competitive, many miners and newcomers to the area began farming. The doctrine protected the first settler to use water on his land. Later settlers had to respect the prior ownership of land and the amount of water which the prior settler was using.

The history of adoption and changes of the prior appropriation doctrine over the past 100 years is a fascinating study of social conflict and problem solving. It is, however, beyond the scope of this report. Briefly, the doctrine was recognized first by courts in some states, followed by constitutional provisions and/or legislative enactments. Often cases followed the legislative actions to uphold the constitutionality and exclusiveness of this doctrine of water use and control. Most of the early activity in adopting the doctrine occurred from the mid-1800's to the turn of the century. For an historical background of the seventeen western states, see Clark, Volume 1 (1967), Kinney (1912), Thomas (1920), and Mead (1903).

The system that emerged was simple and direct. Although there are many variations between the appropriation doctrine states, a number of key principles exist to establish commonality, if not relative uniformity, among the states. These principles are:

1. There had to be a diversion from a natural stream or body of water. This has been relaxed in most western states during the last decade to allow in-stream use for recreation, fish and wildlife protection.

2. The water must be applied to a beneficial use. Initially, this was defined in constitutions and/or statutes to be domestic, municipal, stock watering, irrigation, and certain industrial and power uses. Some state laws, like Wyoming, reflect the economic influence of one sector over another (i.e., the railroad uses were preferred to agricultural uses). In most of the western states, however, the rural representation insured agriculture a high position as a beneficial user.

3. When these two acts were completed, a water right was created. This right entitled the holder to continued use so long as the use was beneficial.

4. Every water right acquires a priority date such that priority of right and not equality of right is the basis for distributing water.

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[7] The first decision in American courts which recognized this doctrine was Irwin v. Phillips, 5 Cal. 140, 1855. The California Supreme Court cited no precedents in its decision for there were none. The developing common law had received a new addition.

The Water Right--

The entire system of prior appropriation is based upon and evolves around the allocation of water under the concept of the water right. Simply put, this doctrine creates the right of private use of a public resource under certain conditions, which use has been declared to be a public use. The right does not automatically exist by virtue of the presence of water upon, flowing through, or under land. In all western states, these waters (some exceptions) are declared to be the property of the public, people, or state (see Table 1, Column 3). Regardless of whether the state or the public (people) own the water, the courts have held the state as a trustee to the public for the proper allocation and distribution of water and granting and protecting the right to use the water so allocated. Wyoming law states, for example:

> A water right is a right to use the water of the state, when such use has been acquired by the beneficial application of water under the laws of the state relating thereto, and in conformity with the rules and regulations dependent thereon (W.S.A., Sec. 41-2).

In Colorado, the Supreme Court very early in the state's history announced a rule that can be found in every statutory or judicial law of the other appropriation doctrine states. The famous Coffin v. Lefthand Ditch Co. was decided in 1882 and held:

> ...water in the various streams thus acquires a value unknown in moister climates. Instead of being a mere incident in the soil, it rises when appropriated to the dignity of a distinct usufructuary estate or right of property...the right to property in this country by priority of appropriation thereto, we think it is and has always been the duty of the national and state governments to protect (6 Colo. 443).

The right so acquired has two legal characteristics. First, the right itself is a real property right. It is an exclusive right, which like other property interests can be defined, is valuable and can be sold, transferred, mortgaged, or bequeathed. But the right differs from the right that attaches to land or chattels, for it is only a right to use the resource. Thus, it is called a usufructuary right (see Coffin case above and O.S.A. 82, Sec. 105.2 as examples of judicial and legislative holdings).

The second characteristic is that since it is only a usufructuary right and can only be exercised when the water authorized for diversion under the right is available and can be put to beneficial use, there is no absolute ownership in the corpus of the water prior to diversion. This water is still a public resource, and if the right holder cannot put it to beneficial use, he must allow it to flow past his point of diversion to other appropriations. However, if he can appropriately use the water, that water which is diverted into his delivery system is his personal property until it returns back to the stream or escapes his control.

The water right under the appropriation doctrine consists of several defining elements that give it value, dependability and security to the holder. The right:

- exists to a definite source of supply, e.g., specific river, lake, or ground water aquifer;
- is for a fixed and stated maximum quantity divertable;
- has a definite point of diversion to which conditions are to be maintained as of the time the appropriation took place;
- specifies the type of use for the diverted water;
- identifies the place of use (for application in the case of irrigation);
- implies the annual time of use based upon type and place of use; and
- assures the holder of at least an implied protection to the maintenance of water quality necessary to carry out the purposes for which the water was appropriated.

As previously stated, one of the key principles to the prior appropriation doctrine is the "priority of right" that is granted a user over subsequent appropriation. It is most often the priority date, dependability of flow in stream and location of point of diversion that give a water its value. In most states, the priority date is the date the application for a water right is received by the state agency. Generally, an application must be filed with pertinent information relative to the user, use and source of supply. If the application is approved, the water right will normally have the priority of the date of application (Table 1, Column 8). If the use requires construction of diversion, storage and delivery works over a period of years, the right, if the application is approved and notice to proceed given, will still retain the date of application when the water actually is put to use, through operation of the "doctrine of relation back." If, however, the applicant does not construct the works within the time period acceptable to both parties, and the delay is unexcusable, the right may have a priority beginning on the date the water is put to use.

Several systems were developed by the states to allocate water and provide evidence of water rights, including posting a notice at the point of diversion and filing a record with the county clerk. The predominant approach now is the permit system (Table 1, Column 4). An application is filed with the appropriate state agency who then takes the procedural steps of evaluating and determining its disposition. If approved, a permit is issued which may contain conditions of use. If denied, the applicant may appeal the administrative decision to the court. In some cases, the finalized water right may be called a license or certificate.

A few states have different classes of permits which greatly enhance their ability to allocate and regulate the use of water among competing interests. In Texas, there are eight classes of permits:

- regular permit--year-round perpetual right;
- seasonal permit--portion of calendar year (irrigation season and perpetual);
- temporary permit--short-lived specific use, no longer than 3 years;
- term permit--fixed number of years and expires;
- contractual permit--authorizes an appropriator to contract the use of his water to another for a term;
- permit under Section 5.141--authorizes impoundment on nonnavigable stream or permittees' own property of less than 200 acre-feet and use for any specified purpose;
- storage permit--storage of water for project;
- emergency permit--allows emergency appropriation for not more than 30 days for public health, safety and welfare (T.W.R.C. Rule 129.02. 05.001-.008).

Oklahoma has two broad categories of permanent and nonpermanent permits. The former is subdivided into regular and seasonal, while the latter is divided into temporary and term (O.W.R.B., Rule 350). All states grant direct flow and storage permits. Colorado is the only state that does not have public representation in the water right allocation process. Water rights applications are submitted to the appropriate Water Court (one water court in each of the seven water divisions). Through a statutorily defined process, the Court and its referee act upon the application by giving notice through newspaper publication to water users in the area and holding hearings so protests to the application can be heard. If the application is acceptable, the Water Court will issue a decree as evidence of the water right. A conditional decree may be issued if the work to complete the diversion and put the water to beneficial use is to take place over a period of time.

One of the frustrating problems to water administrators and planners and often costly to water users under the current high demand for water and increase in sales and transfer is the recordation of water rights. The majority of states have a registry of the original issued water rights (Table 1, Column 10), which identifies the original appropriation, point of diversion, source of supply, amount divertable in continuous flow, or total volume terms, and type and place of use. In all states, any change or transfer in place or type of use and point of diversion must be approved by the state agency. This is primarily to protect other appropriators who may be adversely affected by the transfer if conditions of the stream and return flow are not accounted for. But, few states actually maintain a current registry of water rights that reflect current ownership. These states have either a water rights recording or registry requirement in their statutes, or adopted regulations requiring notice to the agency of all ownership changes. Oklahoma and Texas have a computer card type report form that right holders must submit annually with pertinent data concerning ownership, amount of water diverted, and what uses were made of the resource. In some cases, failure to notify the state agency of ownership and other changes is prima facie evidence of nonuse and could lead to forfeiture or abandonment. The burden of notice is usually placed upon the current owner. Even in many of these states, however, the current listing is not complete.

In the past, the purely engineering concerns of source, diversion point and type of use may have been sufficient to distribute water, that is, water could only be diverted out of a fixed and definite headgate. But, with problems of increased demand on the available supplies and the present need to resolve such water quality problems as those stemming from irrigation return flows, greater efficiencies in use must be achieved. This can and, in many cases, is being brought about by: 1) transfer of right to use water to higher value uses; 2) some voluntary action by water users to improve the diversion and delivery structures and locations; and 3) tighter administration of the conditions of water use granted a water right holder under the law. To effectively administer these laws (beneficial use and nonwaste provisions), carry out water planning and development, and even take full advantage of transfer characteristics inherent in the property right in water, accurate records of current ownership and use are required.

Basis and Criteria of Allocation and Use

Beneficial Use--

The cornerstone of water allocation under western water law as it has evolved is that beneficial use is the basis and measure of the right to use water. This is often the extent of definition found in the majority of western states water law (e.g., A.R.S., Sec. 45-101; N.R.S., Sec. 533.035; S.D.L., Sec. 46-1-8; W.S.A., Sec. 41-2). Thus, in order to use water, it must be taken for a beneficial purpose. This has evolved into the position that not only must water be used for a beneficial purpose, but beneficial use is the limit of the right (Farmers Highline Canal and Reservoir Co. v. Golden, 129 Colo. 575, 272 P.2d 629, 1954). Usually the term "beneficial use" is not defined per se, but is decided on a case-by-case method. It has two aspects, referred to above, that complicate the concept even more. Water is allocated to a beneficial use, so for that reason many statutory provisions list types of uses recognized as being beneficial. Among the uses recognized as beneficial are: irrigation, domestic, power production, municipal, industrial, recreation, and minimum flows for aquatic life. This short list is not meant to be comprehensive, but rather only to illustrate the spectrum recognized. See Section 2.4 in the state reports for each state's position on recognized beneficial uses.

The other aspect is that the use of the water itself must be beneficial and carried out in a beneficial manner. On this point, several states have elaborated the definition to apply directly to the administration of the laws. In California, the use of water is subject to the constitutional requirements that such use:

> ...shall be limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste, or unreasonable use or unreasonable diversion, of water (Cal. Const. Art. X, Sec. 2).

Texas applies this broad but more defined approach to beneficial use also. It requires that no more water be allocated and used than that amount "economically necessary for the purpose authorized when reasonable intelligence and reasonable diligence are used in applying that water to that purpose" (T.C.A., Sec. 5.002).

New Mexico law directs itself to irrigation specifically by placing a limitation on all rights by instructing the State Engineer not to allow the diversion of more water for irrigation than can be used consistent with good agricultural practices to produce the most effective use of water (N.M., Sec. 75-5-17).

Washington similarly addresses the use of water by agriculture. Its laws provide that an appropriator will be provided that quantity of water reasonably necessary to irrigate his land, but this irrigation is to be accomplished by the most economical method of artificial irrigation according to the methods employed in the vicinity where the land is situated (R.C.W., Sec. 90.03.040). The most economical method is to be determined by the court.

The concept of reasonableness is playing an increasingly more important role in appropriation states. For example, it may no longer be reasonable to irrigate a crop by flooding when another method, readily available, will produce crops as well or better and simultaneously save some of the water. Thus, even though the use--irrigation--is beneficial, the method of application is not reasonable.

Duty of Water--

In addition to the requirement that water will be allocated to a user for a beneficial use, most states have adopted criteria to be followed in allocating water to agriculture. This criterion is commonly referred to as the statutory duty of water. To quote from the Supreme Court of Colorado:

> It is that measure of water, which by careful management and use, without wastage, is reasonably required to be applied to any given tract of land for such period of time as may be adequate to produce therefrom a maximum amount of such crops as ordinarily are grown thereon (Farmers Highline Canal and Reservoir Co. v. Golden, 129 Colo. 575 at 584, 270 p.2d 629, 1954).

The majority of states incorporate this into their determination of the amount to be granted the water right applicant. But several states have quantified the duty. Little uniformity exists, indicating the different conditions found in the states. Idaho, Wyoming and North Dakota allow 1 cubic foot per second (cfs) per 50, 70 and 80 acres, respectively. South Dakota and Nebraska also allow 1 cfs per 70 acres, but no more than 3 acre-feet per acre. Montana allows 1 miners inch per acre and Kansas varies between 1 to 2 acre-feet per acre, depending upon the circumstances (Table 1, Column 6).

Provisions in Nevada are particularly important to the subject of this report. In Nevada, the State Engineer is to consider the duties of water established by court decrees or by experimentation in the area where the water is to be used (N.R.S., Sec. 533.070). He is also instructed to consider the growing season, type of culture, and reasonable transportation losses. This flexibility allows the State Engineer to be precise in allocating water.

Waste--

The corollary to beneficial use of water is the duty not to commit waste of water. This requirement is expressed by statute or court decision in all the western states. However, it is difficult to define what constitutes beneficial except on a case-by-case approach, and it is equally difficult to state categorically what constitutes waste. In the analysis of case law by Hutchins, Elles and DeBraal, they note that an appropriator need not take extraordinary precautions to prevent waste if it is a reasonable use of the water according to the customs of the community (citing Joerger v. Pacific Gas and Electric Co., 207 Cal. 8, 273 P.1017, 1929), so long as the custom does not involve unnecessary waste of water (Hutchins, Vol. 1, 1971, p. 498).

Many states have statutory provisions like that found in Arizona (A.R.S. Sec. 45-109) and Nevada (N.R.S., Sec. 533, 460), which prohibit waste and charge the party so committing waste to the detriment of another to be guilty of a misdemeanor.

Preferences and Priority to Use

These are two concepts in the appropriation doctrine that are often intermingled and confused in use of the terms. Priority of right has been described above as the date of a right that distinguished it from all other rights for purposes of distribution of available water supplies in the source from which the appropriation is attached. This enables the senior right holder to demand and receive his allocation at the time the senior places a call for his water before the junior is entitled to exercise his. During low flows or scarcity, diversions are shut off in inverse order. Hence, the value of an early water right becomes apparent.

Preferences, however, do not address a date of appropriation, but rather the type of use that receives preferential treatment by laws. In many states, certain types of uses are placed in an order establishing their preferred position. See Column 7, Table 1, for a listing of priority as found in each state's constitution or statutory provision.

Establishing an order of preferred status for various types of uses has two primary purposes. The first purpose occurs during the allocation of a limited supply of unappropriated water between two or more applicants for different uses submitting their applications at the same time (date of application). If the applications are received at different dates, this may govern the allocation of the unappropriated water, where there is not enough to meet the needs of all applicants. But, if the applications are reviewed at the same time, the allocating agency can use the preference criteria to grant the needs first to the highest preferred use applying, and so on until all appropriated water is allocated, providing the applicants meet the other requirements for a water right.

The second aspect of the preference system is that during periods of scarcity, the preferred use has a right to condemn the water right of non-preferred use. In all states but Texas, compensation must be paid. Texas has no "absolute preference" system which provides municipalities with the right to take water without compensation, but as a rule compensation is usually paid when water rights are condemned.

GROUND WATER LAWS

Introduction

Ground water resources are beginning to play a major role in agricultural, municipal and industrial water use. Approximately one-fifth of the water withdrawn in the United States comes from this source. Nearly one-third of the nation overlies ground water from which a well capable of producing at least 50 gallons per minute could be installed. Due to decreasing costs in ground water removal as technology advances relative to alternative surface supplies, and the reduction of loss plus more precise control over timing of delivery and volume discharged, this resource is increasingly being called upon to meet large-scale needs for agriculture and such uses as oil shale processing and coal slurry pipelines in the western states.

Laws controlling the extraction and use of ground water have become as complex as surface water doctrines. Basically, however, the states apply one of four doctrines--absolute ownership, reasonable use, prior appropriation, or correlative rights (see Corker, 1971). Column 2 of Table 1 identifies the doctrines adopted by each state. A thorough treatment of ground water laws up to 1970 can be found in Hutchins (1974). Chalmers (1974) focuses specifically upon the seven southwestern states, with a description of the statutory and case law as well as the ground water locations and uses.

Absolute Ownership

The doctrine of absolute ownership had its origin in the United Kingdom with the 1843 decision of Acton v. Blundell (152 Eng. Rep. 1223.1843). Simply stated, the doctrine holds that a landowner can withdraw any water from beneath his land without liability to his neighbors resulting from such action.

This doctrine was originally adopted in a great number of eastern states where water was abundant. It still is in operation in many states, but the adverse effects of ground water mining, land subsidence and adjacent landowner claims of water stealing are putting pressures upon several states to change this law.

Among the western states, only Texas has retained this rule. In Texas, the rule applies only to percolating waters and to subterranean streams or tributary stream underflows. But the presumption is that all ground water is percolating, thus allowing a landowner to take and use or sell all the water he can capture from beneath his land (Texas Water Plan, 1968). In areas where a defined aquifer exists, landowners can organize into a ground water conservation district and establish location, depth, discharge, and use rules (T.C.A., Sec. 7880).

Reasonable Use

Due to the extreme position of ground water use without liability as proclaimed under the absolute ownership doctrine, many states began modifying the laws into what has become known as the "American Rule of Reasonable Use." This change is synonymous to the modifications in the surface riparian doctrine. The rule of this doctrine is: since the rights of adjacent landowners are similar and their enjoyment in the use of ground waters is dependent upon the action of other overlying landowners, each landowner is restricted to a reasonable exercise of his own rights and reasonable use of his own property, in view of the similar rights of others (Mecker v. E. Orange, 77 N.J.L. 623, 74 A.379, 1909).

Among the two states that have still retained the reasonable use doctrine (Arizona and Nebraska), Arizona holds that one landowner can withdraw ground water, even though some harm is dealt his neighbor, if he is making a reasonable use of the water on land from under which the water is taken (Bristor v. Cheatham, 77 Ariz. 227, 255, P.2d 173, 1953). Nebraska will allow out-of-basin diversions for municipal use if no damage is done to overlying landowners in the area where the water is extracted (In re. Metropolitan Utilities District of Omaha, 179 Neb. 783, 140 N.W. 2d 626, 1966). It appeared that Arizona was leaning toward the Nebraska rule in the Jarvis cases (Jarvis v. State Land Department, 456 P.2d 385, 1964 and Jarvis v. State Land Department, 479 P.2d 269, 1970), with little limitation. Then, in early 1977, the court held in Farmers Investment Co. v. Bettery, et al. (558 P.2d 14) that water cannot be transported out of a basin if other overlying landowners are injured by the withdrawals. It is also important to note that neither state has yet adopted a comprehensive ground water code. This doctrine leaves much speculation as to what is "reasonable use," but on the other hand, affords some measure of protection to property now existing and greater justification for the attempt to make new developments (Katz v. Walkinshaw, 141 Cal. 116, 74 P.766, 1903).

Correlative Rights

The doctrine of correlative rights in ground water originated in California and is a further refinement to the reasonable use concept. Several states originally adopted this doctrine, then changed to another rule (i.e., Utah), but now only California, among the western states, applies this rule. The doctrine holds that among landowners overlying an underground water supply, each landowner can make a reasonable use of that supply so long as the source is sufficient. But when the supply becomes insufficient due to the drought or draw-down effect, each landowner is entitled to water in proportion to the percent of his land in relation to all other lands overlying the underground waters (Katz v. Walkinshaw, supra.). The net effect is to provide great flexibility of ground water use in an effort to maximize the resources, while providing equitable allocation when shortages occur.

Prior Appropriation

Most of the western states found little reason to differentiate their systems of water law for surface waters and ground waters. As a consequence, they adopted ground water statutes of a similar philosophy stating that this source should be allowed maximum development with recognition and protection given prior users. This does not imply, however, that surface water law was automatically applicable to ground water. In fact, several states enacted laws to control ground waters as late as mid-1950's and 1960's.

The rule provides that ground water is subject to appropriation for beneficial use providing the intended user complies with the statutory requirements, obtaining a permit or license as the case may be. The administrative official must determine if unappropriated ground water exists and what adverse effects would occur from approving the application. In most states, the law allows the state water official, upon a determination that a particular ground water basin needs close management of withdrawals, to classify the area as a critical or designated ground water basin (see Colorado or New Mexico laws). When this occurs, the users are placed under direct control for the protection of the aquifer and vested rights.

Conjunctive Use of Surface and Ground Water

In many areas throughout the West, ground and surface waters are hydrologically interconnected so that withdrawals from one source affect the other sources. The usual situation is that surface water users are senior in time with a considerable investment in a diversion and delivery system for their water supply.

Ground water use began to increase at a rapid rate during the droughts of the 1930's, with gas motor driven pumps. Then in the late 1940's and 1950's, the West witnessed a mass movement toward ground water pumping as the Rural Electrification Administration (REA) brought electricity to the rural areas and pumps could now be driven more economically by electric motors. Conflicts soon arose in Colorado, New Mexico, California and Texas between surface and ground water users. If the courts strictly applied the rules of prior appropriation, most wells would be shut down and a vast amount of water resources would go unutilized. However, if the wells were permitted to pump, people who heavily depended upon the security of their senior surface water right would be grievously affected. Thus, several solutions emerged (see Radosevich and Sutton, 1972). In New Mexico the State Engineer used his authority to declare critical areas as underground water basins, giving him complete control over water management in the area. For any ground water user or applicant whose withdrawals adversely affected stream flows, continued withdrawals must be offset by retiring surface water rights. Thus, both surface and ground water users' rights and economic interests became protected under this "retirement of surface rights" approach. In California, ground water management districts have been formed in general cases by court order to regulate withdrawals and use in the district area. These districts are public entities.

Colorado has taken a different alternative. An "augmentation plan" approach was developed by which ground water users in a common area can create any scheme that guarantees senior surface water users water when they place a call on the river. The schemes may include purchase of reservoirs, surface rights, locating wells at the surface user's headgate, etc. Once drafted, the augmentation plan must be acceptable to the state water officials and surface water users before it can be placed into operation. The entity that emerges is a private voluntary organization. In the event ground water users fail to come up with a plan, their pumping time is regulated by rules promulgated by the State Engineer.

DRAINAGE

The rights of landowners to protect their property from diffused surface waters are only incidental to the irrigation return flow quality problem, because most agriculturalists are concerned with how they can capture and use their source of supply. However, a brief explanation of the rules is considered useful in light of the growing awareness and ability of meeting different plant requirements for moisture and the need to adopt conservation practices which prevent erosion and lead to sediment control.

The three rules are: common enemy rule, civil law rule and reasonable use rule. Under the common enemy rule, diffused surface waters are considered an "enemy" of the landowner and he can construct dikes, drains or other necessary steps to protect his land from the damaging effects of the surface waters (Tillinger v. Frisbie, 138 Mont. 60, 353 P.2d 645, 1960; Gillespie Land and Irrigation Co. v. Gonzalez, 93 Ariz. 152, 372 P.2d 135, 1963, as regards to flood waters).

The civil law rule holds just the opposite. It is "essentially a rule of natural drainage holding that lower land is burdened with a natural easement of drainage in favor of higher land" (Colorado v. Brannon Land and Gravel Co., 534 P.2d 652, Colo. App., 1975). However, the higher land cannot increase the burden on the lower land; and the latter can, if necessary, take protective measures to prevent damage to his land from unreasonable discharges (Harper v. Johannesen, 84 Ida. 278, 371 P.2d 842, 1962). Idaho also recognizes the civil law rule that a natural servitude of natural drainage between adjoining lands exists so that the lower owner must accept the surface water which naturally drains on his land (Dayley v. The City of Burley, 524 P.2d 1073, Idaho, 1974).

The third rule is in between the two previously discussed rules and basically holds that there can be a reasonable interference with the natural flow of water by either party to protect their property (Iven v. Roder, 431 P.2d 321, Okla., 1967). The rules adopted by the western states are shown in Table 1, Column 13.

INCENTIVES AND DISINCENTIVES TO EFFICIENT USE

Basin of Origin

Several states have adopted rules to protect the water needs of landowners and populations within a watershed from future shortages caused by out-of-basin diversions and uses. California adopted a county of origin rule in 1931 (C.W.C., Sec. 10505) and a Watershed Protection Act in 1933 (C.W.C., Sec. 11460 to 11463). These provisions give a general protection to inhabitants within the county and basin to reclaim water in the future if needed from noncounty or basin uses. The impetus to the Watershed Protection Act was the California Water Plan which has proceeded in spite of the reservations for future use within the basin.

Colorado and Nebraska also have limitationson exportation of water from a natural basin (C.R.S., Sec. 37-45-118(IV); and N.R.S., Sec. 46-206 and 46-265). In the case of Colorado, the law requires projects that use water out of the natural basin shall not impair present and prospective uses of water for irrigation and other beneficial consumptive use purposes within the natural basin, nor increase the cost at the expense of users within the basin.

Texas and Oklahoma have taken a different approach to out-of-basin diversions. In Texas, water for transfer out of the basin is restricted to those waters which will be surplus to the reasonably foreseeable water supply requirements within the basin of origin for the next 50-year period (T.C.A., Sec. 8280-9). In 1972, Oklahoma enacted the Stream Water Use Act (O.S.A., 82 Sec. 105). It protects the current water users within a stream system from damaging out-of-basin transfers by requiring the Oklahoma Water Resources Board to review the water needs in the area of origin every five years (Ibid., Sec. 105.12).

Rights and Duties to Return Flows

Return flows are an important source of water in the arid western states, and as such are considered by water users and administrators as a commodity that should not be dealt with lightly. As water rights to natural flows were granted, the streams began to be augmented from seepage, tailwater runoff and percolation. Subsequently, other water rights were granted based upon this source of water and junior in time. As such, the courts have generally held that junior appropriators can rely upon these return flows and protect their rights in this source (Boulder v. Boulder and Left Hand Ditch Company, 557 P.2d 1182, Colo., 1977; East Bench Irrigation Co. v. Desert Irrigation Co., 2 Utah 2d.170, 271, P.2d 449, 1954). Also, as a general rule, irrigation districts can recapture return flows before they leave boundaries and reuse these waters (Ide v. United States, 263 U.S. 297, 1924). But, this rule normally does not extend to individuals as return flows are considered by the courts to be the nonconsumptive uses of water that returns to the stream from the proper and beneficial application of water.

This leaves a fine line between waste water and return flow. In Binning v. Miller, the Wyoming Supreme Court stated a rule common to many jurisdictions that one can recapture his waste water on his property and reuse it thereon (55 Wyo. 451, 102 P.2d 54, 1940). Other jurisdictions have stated that a downstream user can appropriate waste water, but cannot compel the person committing the waste to continue to discharge nor prevent him from adopting improved practices that eliminate the waste (Wedgworth v. Wedgworth, 20 Ariz. 518, 181 P.952, 1919).

Loss of Water Rights

Water rights under the appropriation doctrine can be lost through nonuse or misuse. The theory of this principle under the appropriation doctrine is that since the water right is perpetual (although some states have gone to or are strongly considering term permits), to provide the security of investment to the holder, nonuse or misuse should not prevent someone else from acquiring a right to the water by putting it to beneficial use. There are five primary ways in which one's water right may be lost, aside from expropriation by the government during emergency conditions.

The first is abandonment. Should a right holder not use his right for a statutory period of time and intend not to use it, his water right may be lost. The important element is intent, but this may be difficult for the state or party claiming abandonment to show. The state or another user must bring action against the user and prove both elements. Abandonment rules exist in all the western states.

The second is forfeiture. This is a statutory remedy to nonuse and only requires a showing of nonuse of all or a part of the right for a specified period of time. Automatically, after the statutory term (usually three or five years), the water reverts to the public for appropriation by another (see Table 1, Column 12). There are variations in state laws as to notice and procedures for carrying out the forfeiture provisions. For example, in Oklahoma, water users must file an annual use report for surface and ground water rights. Willful failure to complete and return the form can be considered prima facie evidence of nonuse and subject the right to forfeiture (O.W.R.B., Rules & Regs., Sec. 385.7 and 660.6).

Adverse possession is the third method, and this occurs when another openly and notoriously uses the water right of a person, and that person does nothing about it. If this continues for a specific period, the former can claim the right as his own. The practice is not looked upon with great favor by the courts, however.

Condemnation is the fourth major type. This occurs when a preferred user or public entity exercises the right of condemnation. Normally the only real issue is the amount of compensation. Colorado, however, recently passed a law requiring municipalities condemning agricultural water rights to show the necessity for taking such action (C.R.S., Sec. 38-6-201 to 216; see Radosevich and Sabey, 1977).

A water right can be adversely affected by failure to use the water beneficially or creating waste of water as provided under state law. All western states require that only water that can be put to beneficial use be diverted under a water right, regardless of the amount allowed under the right. In Colorado, the division engineer can refuse to cease delivery to a junior if the efforts to deliver to a senior water right holder would be "futile." In Idaho, an appropriator is limited to the quantity of water specified in his permit that is being beneficially used and any unused water is subject to forfeiture (I.C., Sec. 42-222). Even though the term "beneficial use" per se is not statutorily defined, an appropriation is not valid unless it is pursuant to a beneficial use (I.C., Sec. 42-104). When enforcement of beneficial use has been raised, the courts have held that although conservation of water is a wise public policy, and an appropriator is acting against public policy if he takes more water than necessary to irrigate his land (Coulson v. Aberdeen Springfield Canal Co., 39 Idaho, 320, 227 P.29, 1924), an appropriator should not limit his water right to his minimum needs (Caldwell v. Twin Falls Salmon River Land & Water Co., 225 F. 584, Dist. Ct. Idaho, 1915). So long as an irrigator uses reasonable farming methods, he "is not required to use methods which are costly in labor and money simply because some waste can be saved thereby" (Twin Falls Land and Water Co. v. Twin Falls Canal Co., 7 F. Supp. 238 at 252, Dist. Ct., Ida., 1933).

Thus, water that cannot be put to beneficial use is to be left in the stream for other downstream users. To insure that this water is left in the stream, Nevada's state engineer can, if necessary, hire guards to police the streams and charge the water users the costs of such action (N.R.S, Sec., 533.470).

Water Quality in Water Rights

As has been stated numerous times throughout this report, there is at least an implied right of water quality under the doctrine of prior appropriation. In only one state (California) does the statute make specific provision of the element of water quality in a right, such that a user can make the same demands on an agency to protect his interest in water quality as he can his interest in the quantity he is entitled to according to the priority of right. In spite of the fact that the state of Washington has integrated water quantity and quality management under the Department of Ecology, not much progress has been made to actually implement these two elements in the exercise of water rights and resulting quality of return flow. However, a recent Washington Supreme Court decision holds the Department of Ecology, under the Water Resources Act of 1971 (R.C.W. Ch. 90.54), must consider water quality considerations resulting from a prospective use in deciding to grant or deny an application for a water right (Stempel v. The Department of Water Resources, Case No. 42448, March 29, 1973).

In all the western states, the courts have recognized the common law doctrines of nuisance and trespass as applying to the protection of property interests in water. Several western states have held that with regard to mining operations, they cannot use the water from a stream or the natural water course to discharge any wastes or to otherwise pollute the stream so as to render it unfit for use or fill it up with mud, sand, gravel, or other mining debris (Wright v. Best, 121 P.2d 709, Cal.; Pacific Gas and Electric Co.; 111 P.2d 368, Cal.; Slide Mines v. Left Hand Ditch Co., 77 P.2d 125, Col.; Wilmore v. Chain O'Mines, 44 P.2d 1024, Col.; Ravndale v. North Fork Placers, 91 P.2d 368, Ida.; Berry v. Shell Petroleum Co., 33 P.2d 958, Kan.; People v. New Penn Mines Inc., 28 Cal. R. 337, Cal.; Freel v. Ozark-Mohaning Co., 208 Fed. Supp. 93, Dist. Ct. of Colo.). These cases are briefly discussed in each state report of the companion volume (Achieving Irrigation Return Flow Quality Control Through Improved Legal Systems, Radosevich and Skogerboe, 1978), Appendix A, Section 6.

An example of the nature of cases as they pertain to agriculture is the Idaho decision, Ravndale v. North Fork Placers (60 Ida. 305, 91 P.2d 368, 1939). In that case, plaintiff's ditches and crops were injured by the hydraulic mining process employed by the defendant mining company. The Idaho Supreme Court affirmed the damage judgment awarded by the district court and held that:

> Numerous authorities announce the doctrine that while a prior use of the water of a stream for mining purposes necessarily contaminates it to some extent, such contamination or deterioration of the quality of the water cannot be carried to such a degree as to inflict substantial injury upon another use of the waters of said stream (Ravndale v. North Fork Placers, 60 Ida. 305, 91 P.2d 368, 1939).

In spite of this result, one law review article has stated that private nuisance actions have "provided virtually no incentive to the offenders to reduce their harmful discharges into the waterways" (Wood, 1971). In Texas, the court held that the same salt content which is fixed by statute, as rendering public waters unfit for irrigation purposes, determines the fitness for use of private waters (Nash and Windfohr v. Edens, 109 S.W. 2nd 496, Tex.). Although the court in that case held that the plaintiff had failed to provide sufficient information to establish that the salt content of the water in the streams was unfit for irrigation, or that it seeped through the banks of the stream for several feet and killed large native trees; the court did say that Article 698A of Vernon's Annotated Penal Code applied to irrigation. This section states:

> All discharges of salt water contributing to conditions inhibited by this act or accumulative of conditions inhibited by this act shall be violations of this act; providing that any and all discharges of salt water into a fresh water stream or natural body of fresh water of this state produces or contributes to a salinity in excess of 2,000 parts of salt in one million parts of water shall be violations of this act.

In Oklahoma, courts held that there would be no actionable injury from unreasonable drainage into the stream (St. Louis and S.F.R. Co. v. Burrous, 118 P.143, Okla.). As a general rule, if the pollution of a water course does not constitute a public nuisance, the right to use the water of a stream in such a manner as to pollute it to the prejudice of a lower riparian propriator may be acquired by prescription (Wright v. Best, 121 P.2d 702, Cal.). In order to acquire this right by prescription to pollute a stream, the riparian propriator's use of the water must be injurious and adverse to the lower propriator's interest (Poole v. Olaveson, 356 P.2nd, 61, Ida.). This same right to pollute may be lost by long, continued nonuse (Wright v. Best, 121 P.2d 702, Cal.).

Also, as a general rule, any person who pollutes a natural water course to the injury of a riparian owner is liable for the damages resulting from this (Klassen v. Central Kansas Co-op Creamery Asso., 165 P.2d 601, Kan.; Atlantic Refining Co. v. Fulsom, 91 P.2d 758, Okl.; Humble Pipeline Co. v. Day, 172 S.W. 2nd, 356, Tex.; Rocky Ford Irrigation Co. v. Kents Lake Reservation Co., 135 P.2d 108, Utah). This rule applies even if it comes from a reclamation district (Ingram v. City of Gridley, 224 P.2nd 798, Cal.).

The conclusion from an analysis of all the cases studied to date on the water quality protection issue is that a water user must pursue his own remedy in court if he wishes to protect the quality of water he is receiving.

Transfer of Water Rights and Salvaged and Developed Waters

One last feature of a water right for irrigation use must be mentioned. In all states of the West, when a water right is granted for irrigation use, that right becomes appurtenant to the land(s) described in the permit, that is, it attaches to those lands and cannot be used elsewhere without approval of the state agency (or Water Court in Colorado). Many variations as to the extent of attachment exist, however. Most states use what, for lack of a better term, we call limited attachment. This only requires approval of the state agency when proper measures and adjustments are made in the transfer to prevent impairment of other users' rights. In a few states, like Colorado, the water right does not necessarily transfer with the sale of land (James v. Barker, 99 Colo. 551, 64 P.2d 598, 1937).

In a minority of other states, the appurtenancy rule is strict. That is, the transfer can be approved if for uses other than irrigation (A.R.S., Sec. 45-172), or if it becomes impracticable to use the water economically or beneficially on the original lands (in re Determination of Relative Rights to Use of Waters of Pantona Creek, 45 Ariz. 156, 41 P.2d 288, 1935). Wyoming applies the appurtenancy rule only to direct flow rights, but as noted by Meyers and Tarlock (1971, p. 528), some fourteen statutory exceptions riddle the principle. The other states with strict provisions on transfer are Oklahoma, Oregon, Nebraska, Nevada, and South Dakota. The reason for many states tying water rights to land at the turn of the century was to prevent some of the fraudulent land and water sales practices that had gone on under earlier federal settlement schemes in the West. (See section 2.6 in the state reports, Appendix A, this report.)

The epitome of the transfer restriction problem is represented by the decision in Salt River Valley Water Users Association v. Kovacovich (411 P. 2d 201, Ariz. 1966). The Arizona Supreme Court was presented with the task of deciding whether or not an owner of land having a valid water right may, through water saving practices, apply the water thus saved to immediately adjacent lands in his ownership. Salvaged waters are defined as those waters "saved by improvements made to the channel of a stream; they are waters that otherwise would be lost by seepage or evaporation" (Hutchins, 1942). The defendant improved his conveyance system by lining some ditches and through phreatophyte control in others. The water normally lost through seepage or evaporation was applied to 35 acres of adjacent land. The defendant did not increase his diversion from the river. In analyzing the situation, the court stated:

> It was argued that decision of this issue in favor of appellants (Salt River Valley Water Users Association) would result in penalizing a person who, through their industry, effort and expense, engaged in water saving practices.... Certainly any effort by users of water in Arizona tending toward conservation and more economical use of water is to be highly commended. However, commendable practices do not in themself create legal right.
>
> ...In an effort to achieve some degree of order...our court, through a series of decisions developed and applied what we today refer to as the doctrine of beneficial use.
>
> This court is of the opinion that the doctrine of beneficial use precludes the application of waters gained by water conservation practices to lands other than those to which the water was originally appurtenant.... Beneficial use is the measure and the limit of the use of water.... Any practice, whether through water saving procedures or otherwise whereby appellees may in fact reduce the quantity of water actually taken insures to the benefit of other water users and neither creates a right to use the water saved as a marketable commodity nor the right to apply the same to adjacent property having no appurtenant water right (op cit.).

Fortunately, the holding in Kovacovich is not the general rule. It is generally held that waters salvaged through an individual's improvements in his system accrues to the party saving them (Clark, Vol. 1, p. 342, 1967; Dickenson, 1969). However, the cases establishing the general rule are early cases decided in a period of time when agriculture was King of the West and water shortages did not materially exist. Although a general policy of efficiency and adaptation of conservation practices is the order of the day, the result obtained in Arizona could be decided in other appropriation states upon a strict construction of the beneficial use concept and definition of an appropriation as a result of nonagricultural and influential uses placing demands on limited supplies.

States following the rule of the Kovacovich case regarding the use of salvaged waters could greatly benefit if that decision was distinguished or overturned and instead the rule set out in *Reno v. Richards* (178 P.2d 81, Ida. 1918). Reno held:

> ...if one, by his own efforts, adds to the supply of water in a stream, he is entitled to the water which he has developed even though an appropriator with more senior priority might be without water. The reason for this rule is the obvious one that a person should reap the benefits of his own efforts,

buttressed by the view that a priority relates only to the natural supply of the stream as of the time of the appropriation (Ibid.).

Colorado has taken an interesting position with respect to those who improve their water delivery systems through lining or reducing water-consuming vegetation along the river. In Southeastern Colorado Water Conservancy District v. Shelton Farms, Inc. (529 P.2d, 1321, Colo. 1974), the court held that merely clearing the channel, lining it with concrete or otherwise hastening the flow of water without adding to the existing water does not entitle that person to a water right. However, if one adds to an existing water supply, he is entitled to decree affirming the use of such water. But, strong evidence is required to prove the addition of the water. Further, the court held that if the entity cuts down water-consuming vegetation along the river, they do not have the right to an equivalent amount of water for their own beneficial use free from the call of the river.

The Colorado court, in the Shelton Farms case, held that developed waters are free from the river call and are not junior prior decrees, but that the withdrawal of water must be orderly, and to be orderly it must come under the priority system. It defined developed water as new water that is not previously part of a river system and the salvaged waters are waters in the river or its tributaries including the aquifer which ordinarily would go to waste, but somehow are made available for beneficial use.

The court in the Shelton Farms case was concerned with two judgments and decrees awarding the appealees, Shelton Farms and Colorado--New Mexico Land Company, water rights free from the call of any and all senior decreed water rights in the Arkansas River. The court said that this case, "so far as we are advised, is of first impression in the United States dealing with whether the killing of water-using vegetation and the filling of the marshy area to prevent evaporation can produce a superior water right for the amount of water not transpired or evaporated" (Ibid.). The Pueblo District Court held that it could. The Supreme Court of Colorado reversed this judgment. In this particular case, the facts were that in 1863, there were virtually no water-loving trees along the banks of the Arkansas River. Within the next forty years, the native Indians and the buffalo were decimated and the phreatophytes and cottonwoods began to appear along the Arkansas River. Since 1863, all the surface flow of the river was put to beneficial use and the river is greatly overappropriated. The appealees realized that the phreatophytes created the water shortage by consuming large quantities of subsurface waters which otherwise would be in the stream. Appealee Shelton Farms cleared two land areas of phreatophytes and filled in a marshy area and maintained that he saved approximately 442 acre-feet of water per year. Shelton Farms wanted to augment their other rights with this salvaged water. The lower court awarded the appealee 181.72 acre-feet of water free from call on the river. The lower court's reasoning was that the capture and use of water by another, water which would ordinarily be lost, is not detrimental to the prior holders and therefore is not subject to the priority system. The appealee, Colorado-New Mexico Land Company, received a similar award of 181 acre-feet a year free from the call on the river. The real issue in this case relates to developed salvaged waters and whether the granting of such a unique water right will encourage the denuding of river banks everywhere--trees and shrubs, like the vegetation destroyed in this case, also consume river water.

The court looked at Colorado case law and found that there is no question that one who merely clears out a channel, lines it with concrete, or otherwise hastens the flow of the water without adding to the existing water is not entitled to that decree (Bucker's Irrigation Co. v. The Farmer Ditch Co., 72 P.49, 1903). With a series of cases, the most recent being Fellhauer v. the People (447 P.2d 986, 1968), the appellate court found that when one adds water to an existing water supply, he is entitled to a decree. And this occurs in three situations: 1) when he physically transports water from another source, as from another basin; 2) when his property captures and stores floodwaters; and 3) when he finds water within the system which would never have normally reached the river or its tributaries (for example, trapped water artificially produced by draining a mine or trapped water in independent saucepan-type formations composed of impervious shale which prevents water from escaping). The court then distinguished between developed and salvaged waters.

The court used the following analysis in ruling on the removal of phreatophytes. They said that the roots of the phreatophytes were like a pump. The trees do not have to go to court or seek any right; they merely sucked up the water from prior appropriators. Now, the appealees were taking the water from the trees; therefore the appealees are continuing to take water from the appropriators, but sought a decree to approve it. They have added nothing new, and to grant the appealees an unconditional water right would be a windfall which cannot be allowed. For thirsty men cannot step into the shoes of a water thief (the phreatophytes).

Another very important point was made in the Shelton Farms case. The court maintained that appealees wanted to substitute the priority doctrine with a lack of injury doctrine. It said, in Fellhauer, when speaking of future water law:

> ...it is implicit...that along with a vested right there shall be maximum utilization of the water of this state. The administration of water approaches its second century, the curtain is opening upon a new drama of a maximum utilization and how constitutionally that doctrine can be integrated into the law of vested rights. We have known for a long time that the doctrine was lurking in the backstage shadows as a result of the accepted, though oft-violated, principle that the right to water does not give the right to waste it (Ibid.).

The legislature responded by making a statutory declaration of these twin mandates of protecting vested rights and achieving maximum utilization. The court held that the doctrine of prior appropriation is essential and that all water decrees of any kind are bound to the call of the river, subject to any specific exemptions found in law. The court went on to say:

> We arrive at the instant decision with reluctance, as we are loathe to stifle creativity in finding new water supplies and

> do not wish to discourage maximum beneficial use call of the water, but there are questions of policy to consider. If new waters can be had by appealees...without legislative supervision, there will be perhaps thousands of such decrees on all rivers in the state (Ibid.).

It is rather unique that the court went on by quoting the State Engineer of New Mexico, Mr. S. E. Reynolds:

> ...if one ignores the technical difficulty in determining the amount of water salvaged, this proposal at first blush might seem reasonable in the interest of the best use of water and related land resources...(Ibid.).
>
> On closer scrutiny, it appears that if the water supply of prior existing rights is lost to an encroaching phreatophyte, and then taken by individuals irrigating the plant, the result would be chaos. The doctrine of prior appropriation as we know it would fall--the phreatophyte, and then the individual salvaging water, would have the best right. Furthermore, if individuals salvaging public water lost to encroaching phreatophytes were permitted to create new water rights where there is no new water, the price of salt cedar jungles would rise sharply. And we can expect to see a thriving, if clandestine, business in salt cedar seed and phreatophyte cultivation (Ibid., 1327).

The court then went on to say that if they were to confirm the decrees, the use of the power saw and the bulldozer would generate a better right than the earliest right on the ditch. Furthermore, it concluded, if all these plants were to be cut down, the soil on the banks of the river would slip away and cause erosion.

SUMMARY

The law of water allocation and use in the seventeen western states is in a very rapid state of change. In order to be fully apprised of its status, a constant monitoring of case and statutory law is required. As the traditional composition of many state legislatures goes from rural to urban, it is a sure bet that the protection of past irrigation practices in the use of water will come under great scrutiny and be subjected to many changes. Better water management will be the focus.

Directly affecting the management of water in the West is the water right designed to provide the water user with the same constitutional guarantees extended to real property. The resulting effect upon agricultural users is that certain rigidities in the exercise and protection of the right inhibit adaptation of more efficient practices. Furthermore, the water right holder is primarily concerned with his immediate geographic area, and not with the effects from exercising his right upon downstream users and users who may be in another state and themselves subject to different rules and regulations.

Again, it can only be anticipated that in the near future greater uniformity in the law among the states and in water use efficiency criteria will occur.

SECTION 6

STATE WATER QUANTITY AGENCIES AND LOCAL WATER ENTITIES IN THE WEST

EVOLUTION AND STATUS OF WATER ADMINISTRATION

Water administration began to evolve in the western United States simultaneously with the legislative enactments creating property rights in the use of water and declaring the states' duty to insure that waters will be allocated and distributed according to the rights so established. This early structuring of government agencies for water control effectively began with water quantity activities as a result of the increased growth of the West in the last half of the 1800's. This growth was stimulated by federal land settlement schemes and the emergence at the turn of the century of a national reclamation program. (See Clark, 1967, Vol. 1, Ch. 2, for detailed discussion of state water administration. For historical interest in early state organizations, see Mead, 1903; Thomas, 1920; Kinney, 1912; and Wiel, 1911.) Water pollution control also became a state agency activity in the last 1800's, but initially only as pollution caused diseases. This was one of the activities of the state Public Health Department.

In 1879, Colorado was the first state to create a water rights administration agency, followed by Wyoming in 1890. From the very outset, the distinction between the Colorado and Wyoming approaches has influenced the subsequent organizational patterns of the other western states. Colorado's model has remained virtually unchanged over the years. Allocation of water and adjudication of water rights was the function of courts, while distribution of water and administration of water quantity control laws for exercise and protection of water rights was the duty of the State Engineer.

The difficulty of having these four major duties divided between the judiciary and executive branches led Wyoming to adopt an approach in which all four duties were combined into an entity of the executive branch. Wyoming's approach is also unique and has not been duplicated in any other state, but it has served as the pattern for most of the remaining states. The Office of State Engineer was created (a territorial Engineer existed prior to statehood) and the State of Wyoming was divided into four divisions consistent with the hydrologic boundaries of the four major river basins. In each division is appointed a superintendent engineer that is responsible for distribution of water in the division. The State Engineer is responsible for administration of the water laws. He, plus the four division superintendents, comprise the State Board of Control which in a quasi-judicial capacity allocates water and adjudicates water rights. Parties adversely affected by their action have the right to judicial review. The State Engineer and his four superintendents are appointed by the Governor.

This combined all four major water quantity duties--i.e.: 1) allocation and 2) distribution of water; 3) adjudication of water rights according to the allocation made; and 4) administration of water law--into essentially one agency, the Office of State Engineer. It placed the responsibility of making policy and water management decisions into the hands of those most closely associated with water distribution and administration of the law and rules and regulations adopted by the Board.

As reported by Clark (1967, Vol. 1, p. 103):

> Nebraska followed the Wyoming system closely in 1895. Variations were adopted by Idaho and Utah in 1903; by Nevada, New Mexico, Utah, North Dakota, South Dakota, and Oklahoma in 1905; by Oregon in 1909; by Texas in 1913; by California in 1914; by Kansas and Washington in 1917; and by Arizona in 1919.

Only in 1971 has Montana adopted an administrative structure in charge of water allocation, distribution of water, administration of water rights, and initiation of adjudication proceedings. Following a trend that began appearing in the 1950's, a Department of Natural Resources and Conservation was created with the Water Resources Division in charge of water matters. The reorganization that took place in 1971-72, however, still lacked the ability to effectively administer water rights under the system of recordation followed by the state. The water rights were recorded in the district courts, with no central control over either allocation or planning of future use. Consequently, in 1972 a constitutional amendment was adopted which states:

> (4) The legislature shall provide for the administration, control, and regulation of water rights and shall establish a system of centralized records, in addition to the present system of local records (Mont. Const. Art. IX, Sec. 3).

Following the constitutional amendment, the Department was granted the additional powers by legislative enactment.

Colorado is thus the only state in the West in which administrative control over acquisition of surface waters does not exist. In Colorado, the courts, who grant surface water rights, had no real guidance or assistance in establishing priorities until the 1969 Water Rights Determination and Administration Act was passed.

Many of the states have reorganized and changed the titles of the key personnel. In fact, several states are currently considering reorganization plans (i.e., Oklahoma and Texas), with the most predominant feature in the new organizational structure being the integration of water quantity and quality control under one agency. The present status of state agencies charged with water allocation rights administration and water planning and development is set out in Table 2. For an explanation of the precise functions and composition of the state agencies, see Section 3 of the state water quantity reports, infra Appendix A, and Radosevich and Skogerboe (1978), Appendix A, Section 2.

TABLE 2: STATE WATER ADMINISTRATION, PLANNING AND DEVELOPMENT AGENCIES.

State	Water Rights Administration	Planning and Development
1. Arizona	Chief Division of Water Rights State Land Department	State Water Engineer Arizona Water Commission
2. California	Chairman State Water Resources Control Board The Resources Agency	Director Department of Water Resources The Resources Agency
3. Colorado	State Engineer Division of Water Resources Department of Natural Resources	Director Colorado Water Conservation Board Department of Natural Resources
4. Idaho	Director Department of Water Resources Operations Division	Planning Division Department of Water Resources
5. Kansas	Chief Engineer Division of Water Resources Kansas State Board of Agriculture	Chairman Water Resources Board
6. Montana	Administrator Water Resources Division Engineering Bureau Department of Natural Resources & Conservation	Resources and Planning Bureau Water Resources Division Department of Natural Resources and Conservation
7. Nebraska	Director Department of Water Resources	Chairman Natural Resources Commission
8. Nevada	State Engineer Division of Water Resources (Engineering Section) Department of Conservation & Natural Resources	Special Projects Aid Planning Section Division of Water Resources Department of Conservation and Natural Resources
9. New Mexico	State Engineer State Engineers Office	State Engineer State Engineers Office
10. North Dakota	State Engineer State Water Commission (Legal Services Division)	Division of Planning State Engineer State Water Commission
11. Oklahoma	Director Water Resources Board	Director Water Resources Board
12. Oregon	Director Water Resources Department (Water Rights Division)	Policy and Planning Division Water Resources Department
13. South Dakota	Director Division of Water Rights Department of Natural Resources Development	Director Division of Resource Management Department of Natural Resources Development
14. Texas	Chairman Texas Water Rights Commission	Chairman Texas Water Development Board
15. Utah	State Engineer Division of Water Rights Department of Natural Resources	Director Division of Water Resources Department of Natural Resources
16. Washington	Water Resources Management Division (Water Resources Management Section) Office of Water Programs Department of Ecology	Water Resources Policy Development Section Water Resources Management Division Office of Water Programs Department of Ecology
17. Wyoming	State Engineer and Board of Control State Engineers Office and Board of Control	Wyoming Water Planning Program State Engineers Office and Water Planning Section Department of Economics, Planning and Development

EMERGENCE OF LOCAL IRRIGATION ORGANIZATIONS

A wide array of organizational arrangements evolved within irrigation systems to develop water resources and improve the efficiency of water use. The design and function of each entity depends upon the purpose and scope of authority. Their creation is the result of a natural phenomenon of social interaction. Initially, in most irrigation systems water was diverted by individual farmers to lands near the streambeds. As these lands were settled and it was necessary to utilize lands at greater distances, the cost incurred in developing transportation systems exceeded the financial and physical capabilities of the individual farmer, so he was compelled to develop a cooperative arrangement with his neighbors. The magnitude of this cooperation ranges all the way from independent actions by farmers in small groups to the most complex of local organizations (Mead, 1903; Thomas, 1920; and Kinney, Vol. III, 1912).

As previously noted, the primary purpose for the creation of local irrigation organizations was to develop a water delivery system and, in later stages of development within the irrigation system, to add a water removal system. Farmers, being independent people, are very inclined to minimize any interference with the rights they have on their own properties. For this reason, duties of irrigation organizations normally end at the landowner's headgate, or are assumed to drain waste water or lower high water tables.

The role of the irrigation organizations that have emerged and flourished since the late 1800's was very well described in the Annual Report of the Department of Agriculture in 1903. About these institutions, it was written:

> The farmers who have reclaimed the arid lands of the West are learning that the legal, social and business questions of irrigation are vital factors in their success. Instead of each man being able to work independently of his neighbor, as they were accustomed to do in the East, they find that what their neighbors do has almost as much influence upon the outcome of their year's work as what they do themselves. It is impossible for each farmer to build his own canal and divert the stream independently of his neighbor. The wasteful use of water by the irrigator at the head of the lateral means drought and loss of crops to the man at the lower end. The people of communities are bound together by a common tie of dependence on the canal which diverts the stream and on the stream which makes the soil productive, and the laws and business methods for carrying out this distribution are a controlling factor in the prosperity of the irrigators and the peace and well-being of those who live on irrigated lands. The arrangements for opening and closing the gates of ditches and for keeping laterals in proper condition to carry the needed water supply does as much to determine whether communities shall live in peace or be at war as does the character of the people, and the working out of the laws and business arrangements under which these are carried out involves the settlement of many practical questions and careful study by trained men (Wash., G.P.O., p. 318).

Range of Irrigation Organizations

Within the irrigation system, definite organizational structures emerged over time, ranging from the private individual and irrigation company, to irrigation, conservancy and conservation districts. In many instances, a great variety and multitude of irrigation companies within a given system interact in complex ways in distributing water, providing intricate patterns of interorganizational arrangements.

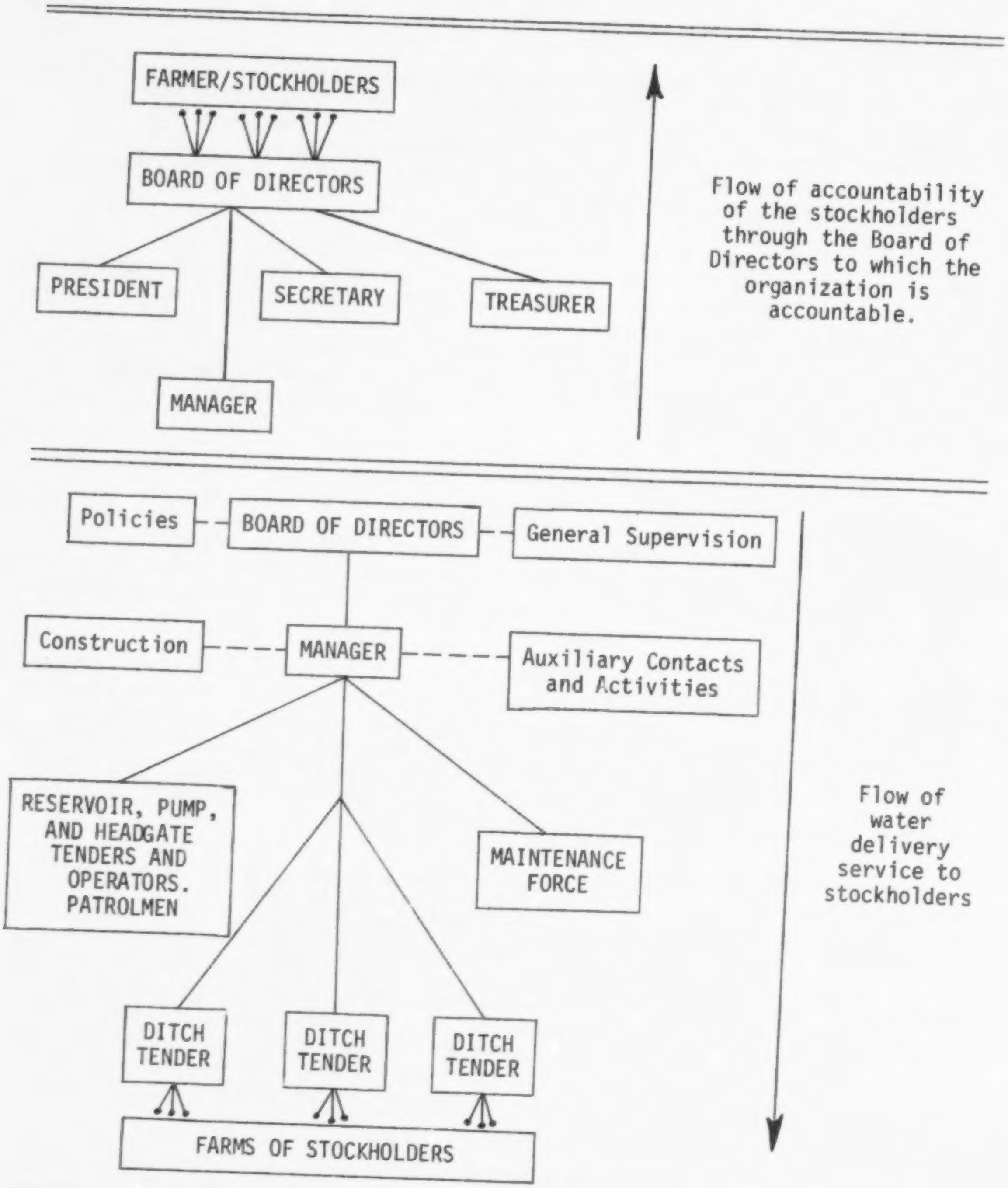
Irrigation companies consist of two types--commercial and mutual. Commercial companies came on the scene first. They were operated by individuals for the sale of water, or to distribute water to farmers and later the public. These were profit-motivated organizations. In the 1870's and 1880's, investors in the East and from Europe contributed capital toward this new discovery in water development. However, early agricultural development in the West was not a very profitable venture and investors began to look elsewhere to place their monies.

These commercial irrigation enterprises evolved into three basic categories: 1) construction and development companies; 2) private contract companies, and 3) public utility companies. Of the three yet in existence, there are a number of private contract companies in certain local areas supplying water to farmers, there are but a handful of private public utility water companies still in existence, and very few, if any, construction and development companies per se.

Not having large sums of money available to pay for services offered by the commercial companies, and being the individuals that they are, farmers soon developed an organization that fit their needs--the mutual irrigation company. At first these enterprises were nothing but an agreement between neighbors for the construction of canals and ditches from the source of their lands. Later, this was made formal by written agreement and usually incorporated under the corporation laws of the state.

These mutual companies are owned and operated by consumers who are also the shareholders. They are non-profit organizations, consisting of voluntary members who, as stockholders, receive water in proportion to their shares. Assessments in proportion to ownership are paid for operation and maintenance of the company and facilities. Figure 5 illustrates the usual organizational structure of a mutual company and its flow or accountability and water service. Instead of distributing profits as dividends, the companies distribute available water to their members. In many areas, these mutual enterprises own and operate storage reservoirs and large conveyance works (see Section 3.3 of each state report for an explanation of the law, water users and their local organizations).

A third type of local water users organization is the voluntary association. These arrangements may be described as associations of persons, usually along the same water supply source, who organize for the purpose of better protecting their rights and the division of waters in the stream between respective owners. Such associations construct the necessary works for the diversion of water and transport it only to the lands of members of the


FARMER/STOCKHOLDERS
BOARD OF DIRECTORS
PRESIDENT
SECRETARY
TREASURER
MANAGER
Flow of accountability of the stockholders through the Board of Directors to which the organization is accountable.
Policies
BOARD OF DIRECTORS
General Supervision
Construction
MANAGER
Auxiliary Contacts and Activities
RESERVOIR, PUMP, AND HEADGATE TENDERS AND OPERATORS. PATROLMEN
MAINTENANCE FORCE
DITCH TENDER
DITCH TENDER
DITCH TENDER
FARMS OF STOCKHOLDERS
Flow of water delivery service to stockholders

SOURCE: Adopted from the Farm Credit Administration pamphlet by Wells A. Hutchins, entitled Organization and Operation of Cooperative Irrigation Companies, pp. 30-31, 1936.

Figure 5. Organizational structure of mutual irrigation companies.

association. The principal difference between the voluntary associations and mutual irrigation companies is that the latter are usually formally organized as a company or incorporated under law. This type of organization is suited to communities where irrigation problems are fairly simple.

Voluntary water users associations are, however, often organized with a considerable degree of local formality.[8] Officers are elected and by-laws, rules and regulations are adopted for governing the respective rights of the members and the general affairs of the association. Though much formality may attend the organization, title to the water rights remains with the individual members and not in the association.

In some jurisdictions (for example, New Mexico), the status of voluntary associations is defined by statute (N.M.S., Sec. 75-14.1). This is seen where a community ditch or "public acequia" was the usual means for diversion and distribution of water. Here, each village or group of farmers constructed its own common ditch. Elections, management, construction, and control of these ditches are regulated by law. Under statutory provisions, every landowner on such a ditch, whether he uses the water or not, is required to contribute his quota of labor or a monetary substitute and is required to maintain and preserve the ditch. Associations formed around community ditches are considered political subdivisions of the state, but, anomalously, the ditches themselves are considered to be private property of persons who completed the ditches, which necessarily means those who live under its irrigation. It is usually provided that all community ditches, or perhaps more accurately, the communities using them shall be considered as corporations or bodies corporate with power to sue or to be sued as such.

Similar to the mutual irrigation company is the water user association. These associations are usually organized by actual or potential waters users, or a federal of existing companies, to contract with the government to build or improve irrigation works. The advantage of this approach is that it provides a means for many poor landowners with small parcels to pool limited funds, irrigate their lands, and increase their crop yields, thereby increasing their incomes. Indeed, such a plan encourages purchases of arid but fertile land which can often be bought at low prices. After irrigation, such land hopefully will support itself and increase in value.

Generally, the object of these associations is threefold:

1. To provide irrigation in an area where individuals do not have funds to finance such a venture independently.

2. To allow the government to deal with one organization representing all water users in an area rather than having to deal with many users on an individual basis.

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[8] For a detailed account of the history, organization and operation of voluntary associations in Texas and New Mexico, see Glick, 1972 and Lovato, 1974.

3. To provide a responsible organization to manage the irrigation contemplated by a reclamation act.

The organization of a water user association must be in such form as is acceptable to the Bureau of Reclamation, although the government takes no active role in operating and managing the works. Essential features of the articles of incorporation include provisions for effecting the reclamation law regarding ownership of the reclaimed area and for guaranteeing repayment to the government of the cost of the reclamation works.

Often a water user association is merely a temporary arrangement. When the governmental agency responsible for overseeing these projects transfers the works entirely to the association, the organization is usually reconstituted to a successor-type of permanent association, such as a mutual company or district. The use of the association by the Bureau to contract with local water users was not very satisfactory, and in the mid-1930's, the Bureau shifted away from the private association to the public irrigation district.

Irrigation districts are quasi-public and public organizations formed to amass sufficient capital to construct and operate irrigation systems on a larger geographical basis than that covered by irrigation companies. Again, the emphasis is primarily upon water delivery and water removal. A distinctive feature of the district is its ability to sell bonds and levy ad valorem property taxes to raise the money necessary for project construction and repayment.

Formation of irrigation districts can be brought about by a voluntary action of the irrigation community or occasionally as a condition to federal and state funding of an irrigation project. A majority of landowners who will benefit from the district activities must vote for formation. Upon approval of the majority of the electors in the proposed district, a board of supervisors or commissioners is elected. This board then completes the formalities of the district's formation. Initially, districts were formed for the single purpose of including the water delivery systems and providing proper timing of the delivery, then similar departments in the functions of drainage and waste water removal were added. Gradually, irrigation districts expanded their functions to municipal water delivery.

In such an evolutionary perspective described above, there is the tendency that along with the demands for more water, larger and improved facilities are needed, so a necessary development takes place from the small user, to the small company, and then to the irrigation district.

The ultimate step in this hierarchy of evolving magnitude and complexity is the conservancy district. In response to the needs for a larger entity--one that has primarily a larger financial base--the conservancy district was created. It is, in effect, the super district taking in many irrigation districts. While these are presently the result of water developments for irrigation, they are also formed for domestic use, manufacturing and power, and other beneficial uses. It is not unusual for these districts to be formed under the Reclamation Act of June 17, 1902, which provides basically for federal planning. Quite often, when there is a dam built by the Bureau of Reclamation, the benefits are distributed throughout the area and the responsible local entity is a conservancy district.

Water User Organizations Activities Related to Irrigation Return Flows

Organizations of water users, whether of the company or district type, must comply with the same standards of beneficial use applicable to individual appropriators. There are, however, additional conditions of water use due to the nature of the organization. In the case of irrigation companies, particularly those organized under the corporation code of the state, there is the responsibility of the board of directors to their shareholders in the performance of their duties to carry out the objectives of the company. Most often, the water rights held by the company are owned by the shareholders (Jacobucci v. District Court in and for the County of Jefferson, 541 P.2d 667, Colo. 1975) and the company is responsible to conduct itself so as to not place these rights in jeopardy. As a practical matter, however, the companies usually deliver the shareholder's water entitlements to the latter's headgate or field, and does not engage in water management in terms of insuring that an efficient use of water is being made. Occasionally, restrictions on use and transfer of water on shares in the company can be found in the by-laws or on the stock certificates.

Irrigation districts are on a slightly different footing than the private irrigation and carrier companies. These organizations are either held to be of a public or quasi-public nature and thus have a higher degree of accountability. They can levy assessments to recover construction, operation and maintenance costs and as such can, and often do, refuse delivery of water until assessments are paid. But, like the private water companies and associations, they traditionally have not been control and management oriented. Their main functions are to collect and/or divide and distribute the water supply to the district water users, operate the structures, and in many cases assist in or construct a drainage system within the district boundaries. It has been maintained by some irrigation districts in Washington and Oregon that their functions do not include responsibility for water quality control in terms of directing the manner in which water is applied. In no state's irrigation district laws has there been found provisions imposing a duty to prevent water quality degradation from water use practices.

Status of Irrigation Organizations in the West

In 1946, Israelson and others published the results of a survey of irrigation companies in Utah. Data were obtained from 688 separate companies. There is no legal limit to the minimum land size of an irrigation company as seen by the fact that 179 of the 688 companies serve areas of less than 300 acres, some even less than 100 acres. The other 509 serve areas larger than 300 acres, the largest one serving approximately 50,000 acres. To staff the 688 separate companies in Utah requires the services of 2,606 officials. Although water delivery and distribution is considered to be largely an engineering problem, only 69 of the 688 companies regularly employed an engineer. The importance of water rights is evidenced by the fact that 167 of the 688 companies regularly employed attorneys.

Table 3 shows a comparison in the number of irrigation organizations for five western states and totals for the seventeen western states and Louisiana. It is interesting to note the decrease in all organizational sectors over the 10-year period with the exceptions of fluctuating changes in the number of irrigation districts and U.S. Bureau of Reclamation projects. At the same time, the 1969 Census reflects a substantial increase in acres irrigated by the water organizations during this time.

These irrigation organizations have a high degree of interrelationship, transferring water from one to another to complete distribution from natural sources through direct diversion or storage facilities to on-farm use. For example, of the 8,479 irrigation organizations accounted for in 1959, five percent received part of their water from another organization and eight percent received all their water from other organizations.

Although the organizational framework for constructing the early canal systems offered a very practical means for developing irrigated agriculture, the lack of change after completing this development has resulted in a number of present-day problems. The addition of each canal usually resulted in the formation of a new irrigation enterprise with the result that many irrigated valleys in the West have a multitude of entities managing the delivery of water in the valley. Problems involving the lack of cooperation among the various entities in bringing about improved water use efficiency appear to be inherent among many groups. In addition, the duplication of water delivery systems has resulted in higher costs for irrigation system rehabilitation, increased operation and maintenance costs, and greater water losses such as seepage, operational bypassing or spillage, and surface and subsurface return flows.

The historical roots of irrigation system developments in the West, along with the emerging needs for meeting large-scale organizational objectives, make it imperative to consider technological alternatives for improving a number of cumbersome water use systems. Alternatives for improvements include lining of canals to prevent seepage losses and transpiration by phreatophytes; installation of closed water distribution systems; small storage or regulation ponds along the water delivery system to allow improved timing of delivery and conserve water during periods of precipitation; use of more and better flow measuring devices to improve the control and equitable distribution of water supplies; and, improving the efficiency of water use in the farm by land-leveling, use of modern irrigation practices, provisions for allowing field runoff to be used on lower fields or recirculated, and use of improved irrigation methods such as sprinkler irrigation or trickle irrigation. Implementation of these technological alternatives can best be carried out by the existing irrigation enterprises and a substantial increase in acres irrigated by the water organizations during this time.

TABLE 3. COMPARISON OF NUMBER AND TYPES OF IRRIGATION ORGANIZATIONS* IN THE WEST.

State	Year	Total	Unincorporated	Incorporated	Commercial	Irrigation District	U.S. Bureau of Reclamation**	U.S. Bureau of Indian Affairs
Arizona	1969	135	44	38	2	24	4	19
	1959	155	42	34	-	15	2	59
	1950	163	61	37	1	12	2	48
Colorado	1969	1,752	1,170	546	6	18	4	1
	1959	1,933	1,261	642	4	14	6	2
	1950	2,302	1,579	686	6	20	4	1
Nevada	1969	110	67	33	1	2	4	3
	1959	116	61	42	1	4	-	8
	1950	157	90	47	2	4	-	14
Utah	1969	957	246	686	5	4	2	1
	1959	984	316	651	1	8	-1	2
	1950	1,058	406	634	2	5	-1	3
Wyoming	1969	705	516	139	3	35	12	1
	1959	686	521	113	1	37	7	6
	1950	693	538	120	2	27	5	1
17 States & Louisiana	1969	7,927	4,266	2,586	208	469	57	56
	1959	8,749	4,989	2,737	246	558	54	123
	1950	10,491	6,464	2,884	401	483	37	141

(Data from Summary Table 7 -- Number of Irrigation Organizations and Acreages Irrigated by Type of Organizations, 1920-1959, U.S. Bureau of Census, U.S. Census of Agriculture, 1959, Vol. III, Irrigation of Agricultural Lands, and Table 34, Reported Purposes of Operation by Type of Irrigation Organization: 1959, Vol. IV, Irrigation, 1969 Census of Agriculture, U.S. Department of Commerce, July 1973).

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* Irrigation organization is defined by the Census Bureau as a business comprising a group of two or more water users, a company, corporation, or governmental district or agency that operates facilities to supply water for the irrigation of farm and ranch lands, being either a formal, legal, organization, or an informal or cooperative arrangement.

** U.S.B.R, constructed and operated organizations. In 1969, there were 259 U.S.B.R. constructed, user-operated projects.

SECTION 7

ISSUES, CONCERNS AND SOLUTIONS

A recent study prepared for the Environmental Protection Agency has concluded that crop production from saline soils has been reduced on one-quarter of the approximately forty-three million acres of irrigated land in the seventeen western states, with salinity threatening the use and production of an additional twenty-five percent (Skogerboe and Law, 1971, p. 134). Aside from the detrimental effects to agriculture in the region, water pollution from irrigation return flows has greatly contributed to the costs of using water by other sectoral users in the several western river basins and to the rise of international tensions under treaty commitments between Mexico and the United States on the Colorado River. A special commission was created to appraise the problem and advise the President on possible approaches to resolving the issue. The Colorado River Basin Conference was convened to analyze the situation and make recommendations to control the salinity in the Basin. It was concluded that salinity will be maintained at or below present levels in the lower reaches of the Colorado River. In August, 1973, an agreement was reached between Mexico and the United States whereby the United States agreed to construct a desalting plant and drainage system to the Gulf of Mexico, to remove salt from the Colorado River adversely affecting 75,000 acres of irrigated land in Mexico.

Although the problem is physical and demands at least a technical solution, many of the underlying causes to the problem stem from the institutional framework providing, permitting and directing the use of water resources in the West. What, how and why the law and its appendages affect irrigation return flow quality control summarize the major concerns of those charged with managing water quality.

The law changes rapidly with every judicial decision and legislative enactment as they respond to the social, political and economic pressures of the system within the geographical jurisdiction or area of influence. Water rights are being transferred to other users and uses, and frequently such transfers have a direct impact on the rate of discharge in the waterways. These changes may or may not have favorable effects upon irrigation return flow quality control.

In Colorado, western slope water rights obtained by eastern slope municipalities and industries, when exercised through transbasin diversions, aggravate the salinity problems in the Colorado River by reducing the assimilative capacity of the stream flow. Conversely, some actions come to the aid of the salinity control program. The Colorado Supreme Court's decision in City and County of Denver v. Fulton Irrigation Ditch Co., 506 P.2d 144 (Colo, 1972) reduced the city's pressure to divert western slope waters to meet the needs of the residents by allowing Denver to recycle and reuse foreign waters identified and recaptured. A decision to the contrary in the Denver case may have been detrimental to any attempts to develop and implement a comprehensive approach to salinity control in the basin states.

The present system of water allocation, distribution, administration, and water right adjudication and operation practiced in the majority of western states does contribute substantially to the irrigation return flow quality problem. By law, a water right can be reduced or lost through nonuse. Consequently, this disincentive compels appropriators to divert and apply the entire quantity provided for in the right, even though this practice may lead to drainage problems and adversely affect downstream users. The law further stifles any initiative to install water-saving practices in certain states by preventing the use of saved water on other lands or for other purposes. Under these and other legal constraints that exist in the water laws, farmers have no economic incentive to alter their present practices for improved techniques.

These issues and concerns can be classified into three general categories: adequacy of the legal provisions, the extent and authority and/or jurisdiction of water agencies, and the effect of the changing socio-economic conditions and demands. The categories are difficult to discuss as separate items due to their interrelationship and interdependence, but subtopics have been isolated to identify the components more precisely.

Nearly every national water resources commission study conducted during the past fifty years has identified the inadequacy of legal provisions as one of the contributing factors to problems experienced in the West. Isolating the wide range of water problems that can and do exist in this region to those related to irrigation return flow quality, water policies, water rights and legal classification of waters stand out as benchmarks. In most of the seventeen western states, the water laws have definite statements of policy for water quantity regulation and water quality control. The statements, however, pose a problem because they: a) generally lack sufficient specificity to provide guidelines for state water agency administrators; b) often fail to recognize the interdependence of water use and resulting degradation of return flows; and c) do not require that existing problems caused from established economies be realized in a pragmatic and cooperative venture by the state and the water users.

Past practices have clearly been to ignore policy statements or to expound very general statements of intent. The issues and problems emerging in the rapidly developing and complex water use systems of the West do require more specificity for administrative guidance. Action by hunch or default is becoming tantamount to arbitrary or conscious action or even worse--negligence in performing duties.

The next key subtopic focuses upon the nature of allocating water in the West--the property right in water. As J. Bentham noted in 1864, "there is no image, no painting, no visible trait which can express the relation that constitutes property. It is not material, it is metaphysical; it is a mere conception of the mind.... The idea of property consists in an established expectation" (from Bentham, Theory of Legislation, Principles of the Civil Code, Part I, pp. 111-113; Dumont (ed.), Hieldreth, Trans., 1864, reprinted in J.E. Cribbett, et al., Cases and Materials on Property, 1960, p.4). Under the doctrine of prior appropriation that exists in every one of the seventeen western states, this mere conception, this established expectation, is so strongly ingrained into the way of life of the water users that any effort to alter water use patterns must start from the premise that change will not materially impair the water rights of those wishing to continue to use the water under the conditions that existed previously, so long as they put the water to beneficial use. In other words, it is politically, economically and socially imperative to recognize the need to protect the vested water rights. A proposal to abrogate the existing water rights would cause such polarization against the government that decades would have to pass before a decent rapport could be reestablished between agricultural water users and the government agencies.

This said, let us look at how the topic of property rights in water has become so elevated in the eyes of those concerned and what might be done. As a result of the constitutional guarantees in the United States to recognize and protect property interests, and the adoption in the West of the concept that a water right is a property right, generations of water users, particularly in the agricultural sector, have established a livelihood highly dependent upon the continued right to a water supply according to the priority of the right, condition of the source of supply and adherence to the requirements of the law in terms of beneficially using the water, filing the proper papers to obtain the right, etc. With time, this allocation for use of unappropriated public waters reached and exceeded the quantity of the source of supply and the more junior appropriators would not be able to divert during low flows. However, among the water users, this was accepted as a fact of life, and only the more daring would attempt to "borrow" another's water. If caught, the price paid was often high--a shooting or at least social ostracism once it became known that "X" was a water thief.

In the last few decades, a new demand has been placed on the surface waters--a demand by the public that the public has an interest and right to some of that water for aesthetic and recreational purposes directly and for the support of fish and wildlife. As has already been discussed in Section 5, those water users who receive water under a water right have a valuable property right that must be exercised or else it could be lost or reduced. This condition to maintaining the right often comes in direct conflict with the public's interest in preserving some of the stream flow or lake level. It is further compounded by water quality considerations, which have only recently been superimposed upon the arena of regulations.

Now, the irrigation water user is faced with a situation not unlike that of an angry badger in a corner pursued by several hunting dogs. And fight, or at least resist, he will as we have seen since 1973. His situation is not like the home owner in a city who turns on the tap and expects water, and if it fails to flow, he can call the city water supplier. Nor is it like the majority of industrial enterprises who either get their water from a city or are large enough to purchase water rights or maintain original appropriation.

Irrigation water users are by and large individuals with a fluctuating income. And among the number of external factors affecting his annual success or failure to make a decent living is the dependability of his water supply. If he is a senior right holder, or member of an irrigation/reclamation project, his supply is normally fairly stable. If he is a junior surface water user, he normally has adjusted his operation according to the amount of water (and usually early in the growing season) that his water right will yield.

Because of the concept of a property right to divert water, agricultural economies have been established. The rights granted are perpetual as long as the water user complies with the requirements of the law. Unfortunately, the records of water rights in most western states do not reflect current owners nor have the "paper water rights" been eliminated. But nonetheless, the water right is both the cornerstone and thorn to efficient water use in the West.

The third subtopic under adequacy of legal provisions concerns the classification of waters in the allocation process. Most states have or are beginning to experience problems associated with ground water use affecting surface water supplies. However, not many states have legally recognized, in policy statements or provisions of the law, the need for conjunctive use of ground waters tributary to surface waters, and fewer states have developed a viable program to tackle the problem as it occurs. The public water management district of California, the augmentation plan of Colorado and the retirement of surface water rights program of New Mexico are examples of the range of approaches employed.

The conjunctive use of ground and surface waters issue is important to the irrigation return flow quality control problem, because the trend is toward more ground water withdrawal. If, as has occurred in a number of states, the ground water withdrawals continue to decrease surface water flows, a concentrating effect will result, and the quality of the water decreases. The policies and laws affecting surface and ground water uses and water quality control need to be reevaluated in light of the physical interdependence and impacts.

The second general category pertains to the organizational ability and administrative capability to enforce the water law provisions and undertake the badly needed shift from a traditional resource development orientation to one strongly emphasizing resource planning and management. From a theoretical point of view, most state laws grant the water agencies legal authority and a variety of enforcement tools (e.g., cease and desist orders, injunctions, terminating or prohibiting diversion of water (exercise of the water right), etc.) to attack a known blatant violation of the law. The issue is not the availability of enforcement procedures, but rather the placement of the burden to show violation, time delay provisions in legal procedures which allow the violator to correct the situation and nullify the protest, then to reinstitute his practice and require a new protest, and a prevailing attitude among some water users that theirs is a right to use more than it is a duty not to misuse the resource. With no exception, the state agencies administering water laws maintain they are understaffed, that it is very difficult to enforce such concepts as beneficial use aside from allowing the historical diversion authorized by the water right, and in most cases, little enforcement is done except where a field official recognizes an obvious waste or misuse or that is reported to a state official by another user or observer in the area.

Several western states have reorganized their water and other natural resources agencies into Departments of Ecology, Environment or Natural Resources with separate resources divisions or bureaus thereunder, or have combined most water activities into one main agency. This facilitates a "resources" objective orientation as opposed to a sectorial or constitutional orientation. In addition, several states have created a water planning and/or development agency or office. But few states are organizationally or functionally in a position to "manage" their water resources in an effort to optimize the use in time and space. In fact, the traditional agency role under the appropriation doctrine is relegated to allocation and distribution of water.

The final major issue is the effect of the changing socio-economic conditions and water resources requirements upon past use practices and existing/established economies. Increased water demands can only be met in many areas throughout the West by allocation of surface waters or reallocation and transfer of existing water rights. Further, increased demands stimulate increased scrutiny of existing uses and calls for increased efficiency in use where practices would decrease the volume of water diverted to those prior appropriators. The consequence would either be to reduce the amount divertable under beneficial use interpretations or allow the water user to possibly lease, rent or otherwise convey "saved or surplus" waters--this permissible, of course, only where not prohibited by legal constraints or impairment of vested water rights.

A number of solutions to these issues and concerns have been set out in Sections 2 and 3 and described in various other sections of the report. The intent here is to provide a classification of the solutions for reference. In the irrigation return flow quality control arena, as with other areas of environmental impact, the range of solutions goes from preventative to curative. In their formulation, the potential solutions can arise from legislative, judicial and administrative initiative and a composite of their joint efforts. Legislatures have a definite role in formulating policy objectives and instituting innovative approaches to problems. An alert and progressive legislature will devise solutions in the law that enable pragmatic implementations toward reaching the desired objective without creating unnecessary social disruption and infringement upon existing rights without compensation or justification.

The judiciary is the forum for action in resolving disputes and interpreting the law to changing conditions. It is often the judiciary that serves as the stimulus for legislative action to rectify constraints and inadequacies in the law. In addition to construing legislative law, courts--particularly in the case of water quality problems--must apply common law remedies in rendering a decision.

We may be concerned with whether an irrigator is being negligent in the use of his water to the point where his actions do not comply with good management and use of the resource. For example, in the case of overapplication of water where he realizes that tailwater will result and he even observes that the return of the tailwater to his stream carries with it considerable sediment which subsequently causes damage to downstream users, the issue becomes whether his actions could amount to negligence. The rules of law in this particular area are concerned with what is legal cause. First, it is necessary to show that there is an adequate causal relation, that is "in order that a negligent actor shall be liable for another's harm, it is necessary not only that the actor's conduct be negligent toward the other, but also that the negligent actor be a legal cause of the other's harm" (Restatement of the Law of Torts, Second, Section 430, p. 426). The Restatement of Torts further states that legal cause occurs if: a) the actor's conduct is a substantial factor in bringing about the harm; and b) there is no rule of law releasing the actor from liability because of the manner in which negligence has resulted in the harm (Restatement of the Law of Torts, Second, Section 431, p. 428).

The situation with irrigation return flow in which there can be considerable detriment caused by salinity, pesticides or sedimentation is one in which many water users are normally involved. In this particular case where in fact their actions may be considered negligent, there is a question of the apportionment of harm. Section 433a, Restatement of The Law of Torts, holds that damages for injury is to be apportioned among causes where either there are distinct harms or there is a reasonable basis for determining the contribution of each cause to a single harm. In explaining this rule, the Restatement provides an illustration: "Due to the negligence of A, B and C, water escapes from irrigation ditches on their land and floods a part of D's farm. There is evidence that 50 percent of the water came from A's ditch, 30 percent from B's ditch and 20 percent from C's. On the basis of this evidence, A may be held liable for 50 percent of the damages to C's farm, B is liable for 30 percent, and C is liable for 20 percent" (Ibid., p. 437). The difficulty, again, in the case of irrigation return flow is in proving that the defendant's conduct actually caused the harm. This burden of proof is upon the plaintiff. Where there are several defendents contributing to the harm of the plaintiff, and the plaintiff can prove that harm has been caused to him by only one of the defendants, but it is uncertain which one caused it, the burden is upon each of the defendents to prove that his action did not cause the harm (Ibid., Section 433b).

There are, basically, two remedies available to one injured by pollution of a stream. The first is an award of damages against the wrongdoer for the detriment sustained, and the second is injunctive relief (C.J.S., Section 53; Barton v. Union Cattle Co., 44, N.W. 454, Nebraska). In defending an action for recovery of damages or an injunction for pollution, it is no defense that the plaintiff might have avoided the injury by taking precautions (Ravndale v. North Fork Placers, 91 P.2d 368, Ida.), or that he could get his necessary supplies from another source (Wright v. Best, 121 P.2d 709, Calif.). In addition, in an action for pollution of a watercourse, the surplus of which had been used by the plaintiff to irrigate his lands, it is no defense that the natural waters of the stream had been appropriated to its full capacity during the ordinary flow by other prior appropriators (Humphreys Tunnel Co. v. Frank, 105 P. 1093, Colorado).

There are several defenses, however, which may or may not apply. The first is assumption of risk. In Klassen v. Central Kansas Co-Op Creamery Asso. (165 P.2d 601, Kansas), the court held that the plaintiff does not assume the risk for a situation of which he has no warning. Neither can a defendant maintain that he has not committed negligence and use this as a defense to prevent the plaintiff from recovering, as it is no defense that the business of the defendant is conducted in the usual manner with care and skill and without intention to injure others.

Estopel is an interesting defense which could be raised. It was held in Kentucky, however, that the fact that the pollution existed at the time the plaintiff acquired the land does not stop him from maintaining an action for damages, but will be considered in determining the equities of the case (W. G. Duncan Coal Co. v. Jones, 254 S.W. 2 720, Kentucky).

In order to recover from damages caused by pollution, the plaintiff must show what injury actually occurred to his crops and the permanent injury to the land along with the date when the injury took place and the annual injury to crops prior to that date (Watson v. Colusa-Parrot Mining Co., 79 P.14, Mont.). Likewise, it was held in Carlsbad Irrigation District v. Ford (128 P.2d 1047, N.M.), that a plaintiff's remedy for an injunction is not lost by the mere lapse of time such that the doctrine of laches would not prevent him from bringing a suit to protect his rights.

Administrative solutions may take many forms, but can generally be described in terms of adopted agency rules and regulations, monitoring of the resource use activities and enforcement of penalties against infractions of the law. Rarely, if ever, is an agency prohibited from developing and adopting rules and regulations to carry out their tasks. Most of the states' water agencies have promulgated rules and regulations in areas of applications for water rights, ground water drilling, pump installation, and pumping, reservoir applications, construction and maintenance, etc. To this writer's knowledge, no state water agency has adopted rules or guidelines for seepage losses in conveyance systems, application efficiencies, or rules for construction of drains and disposal of drainage waters. Often, drain water can be recaptured, and mixed with other appropriated flows.

In order to have an effective enforcement program, monitoring is essential. And, in order to monitor, sufficiently spelled-out guidelines or criteria for water delivery, use and residual discharge are highly desirable. Again, however, monitoring for monitoring's sake is a fruitless and wasteful exercise. Flexibility should exist to require monitoring, with at least water user cost-sharing, only in regions or local areas where problems exist. With a proper data base, enforcement is much easier.

Finally, it should be pointed out that water quality control, with significantly degraded irrigation return flows incorporated therein, can be more successfully undertaken if the approach is a composite and collective activity of the legislature, judiciary and administrative agencies. In this way, policies and programs can be formulated which respond to emerging pressures on the resource base.

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APPENDIX A REPORT 1

ARIZONA

1.1 HISTORICAL BACKGROUND

Arizona is commonly thought of as an arid state with limited water resources for its 113,909 square miles. Precipitation averages 14 inches per year with a range of less than 10 inches in the desert lowlands in the south and southwestern part of the state and plateau uplands of northern Arizona, to pockets of 25 to 40 inches per year in the east central part of the state. Arizona is entirely within the Colorado River Basin with principal rivers being the Salt, Verde, Gila, and Little Colorado. Approximately 6.3 mgd of surface and ground water was diverted to the 1.2 million acres of irrigated land in 1970 (Geraghty, 1973; Kelso, 1973). Given the arid to semi-arid nature of the state, the water laws evolved to allocate the scarce supplies between competing and conflicting users.

The common law doctrine of riparian rights was rejected very early by the territorial legislature (Howell's Code, Ariz. 1864, c.61 §7). Adoption by the territorial legislature of an appropriation law followed quickly (Kinney, 1912, sec. 1711 & 1714), by a directive from the territorial Supreme Court in *Clough v. Wing* (2 Ariz. 371, 17 P. 453, 1888), rejecting the riparian concept and declaring that the right to use water was governed by its appropriation for a beneficial use.

Abrogation of the common law doctrine (specifically in *Austin v. Chandler*, 4 Ariz. 346, 42 P. 483, 1895), along with a recognition of existing rights for useful and beneficial purposes was incorporated into the state constitution (Ariz. Const. Art. XVII, Sec. 1 & 2). Thus the appropriation doctrine is the exclusive means of acquiring a water right in Arizona from early statehood to the present.

In 1919 a comprehensive water code was enacted which governed the appropriation of surface waters. Application to appropriate had to be filed with the state land department which was and still is the exclusive procedure to obtain a water right (A.R.S. §45-101 & 142). Water may be appropriated for any recognized beneficial use and water can be appropriated for delivery to others as well as for the use by the applicant (A.R.S. 45-141). Water law legislation was also enacted in 1921, 1928, 1939, 1943 and 1956.

1.2 SUBSTANTIVE LAW

1.2.1 *Property Right in Water*

Arizona law states that the waters of all sources, flowing in streams, canyons, ravines or other natural channels, or in definite underground channels, whether perennial or intermittent, flood, waste or surplus water, and of lakes, ponds and springs on the surface belong to the public and are subject to appropriation and beneficial use (A.R.S. §45-101 A. 1956). They are placed in trust under the state land department which controls and supervises the water for the public (A.R.S. §45-102, 1956).

Any person, including the United States, the state, or a municipality desiring to make beneficial use of water must apply to the state land department for an appropriation permit (A.R.S. §45-142, Supp. 1972).[1] All applications for an appropriation permit for beneficial use will be granted unless there is a conflict with vested rights or the appropriation would be against the vested interests of the public (A.R.S. §45-143A.). The decision of the department's commission relating to the appropriation permit is not appealable to the Supreme Court (*Smith v. Trott*, 36 Ariz. 166, 283 P. 726, 1930). The granting of this permit authorizes the applicant to immediately begin taking steps to beneficially use the water requested (A.R.S. §45-148). This permit may be assigned to another person (A.R.S. §45-149). When work to put the water to beneficial use is completed, a certificate of right is issued (A.R.S. §45-152A.).

In *Southwest Engineering Co. v. Erns*, (79 Ariz. 403, 291 P2d 764, 1955), the Arizona court excluded percolating ground waters from public ownership and exempted such waters from the appropriation laws. Percolating waters are a component part of the earth and are the property of the owner of the overlying soil (*Gross v. MacCormack*, 75 Ariz. 247, 255 P2d 183). The landowner owns the water beneath the soil (*Jarvis v. State Land Development*, City of Tucson, 104 Ariz. 527, 465 P2d 385, 1969). The right that is acquired is a vested property right in the use of the water, and not in the water itself (*Adams v. Salt River Valley Water Users' Ass'n.*, 53 Ariz. 374, 89 P2d 1060, 1939), but is a valuable right subject to ownership and sale (*City of Phoenix v. State ex. rel. Conway*, 53 Ariz. 28, 85 P2d 56, 1939).

The basis of the water right in Arizona is strictly appropriative, which results in a usufructuary right limited to a beneficial use (A.R.S. §45-101B). This right to use water is a valuable property right subject to certain limitations. A right is a power, privilege, faculty, or demand, inherent in one person and incident upon another . . . a power of free action (Black's Law Dictionary, 4th Ed.). The right to use water is a usufructuary right, i.e. the right of enjoying a thing, the property of which is vested in another. Coupled with every right is a corresponding duty. Used in a context relating to water law, the duty is to use the water beneficially or without waste. The term usufructuary must be limited by defining one's corresponding duty to the water. The word "duty" is the correlative of a right. Thus, wherever there exists a right in any person, there also rests a corresponding duty upon some other person or upon all persons generally (Ibid).

A user cannot take more water than the quantity which is specified in his permit and is limited by the beneficial requirement in Ariz. Rev. Stats. 45-101B.

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[1] Note, however, that a legislative classification of water as "subject to an availability to appropriation" acts as a limit on rights to so acquire nonclassified waters. (*Bristor v. Cheatham*, 75 Ariz. 227, 222 P2d 173, 1953). Also that a long continued use of seasonal water flowing in a canyon without objection has been held to be a valid appropriation even without a permit (*England v. Ally Ong Hing*, 105 Ariz. 65, 459 P2d 498, 1969).

An appropriative right as stated earlier is a usufructuary right. Usufructuary is defined as one who has the usufruct or right of enjoying anything in which he has no property (Cartwright v. Cartwright, 18 Tex. 628). It is the right of enjoying a thing, the property of which is vested in another and to draw from the same all the profit, utility and advantage which it may produce, provided it be without altering the substance of the thing (Mulford v. LeFranc, 26 Cal. 102). Increasing the salinity of the water through an over application of that water to the land would be an alteration of the substance of the thing. If the user cannot use his water without altering the substance, then the right to use the water may be taken away.

The appropriator is entitled to a continuing right to the use of such waters that have been appropriated, but not beyond that reasonably required and actually used (Arizona v. California, 56 S. Ct. 848, 298 U.S. 558). This requirement amounts to a "duty of water," according to the user's needs.

As stated earlier, water flowing in a natural stream is not subject to private ownership. Private rights which do attach are strictly usufructuary rights to take the water from the stream into physical possession and putting it to a beneficial use. Private rights of ownership do not attach to the corpus of the water if it remains in the stream in its natural state (England v. Olly Ong Hing, 8 Ariz. App. 374, 466 P2d 480 1968). Denial of private ownership in the corpus of flowing stream water is subject to the existence and protection of valid private rights to capture, possess, and beneficially use the public waters. The general rule of ownership in the west is that one who diverts water pursuant to a valid right of diversion and use becomes the owner of the particles of water. However, in Slosser v. Salt River Valley Canal Co. (A.R.S. §45-25-2 9), the Arizona Supreme Court held that water in a running stream is public property and continues to be such even when the water has been diverted for a beneficial use. The water remains public property until it has actually been applied to a beneficial use. The court also stated that, "our statutes do not recognize the right of ownership of water, as distinct from its use or application."

Irrigation rights in Arizona historically have had one other peculiar feature: that is, they were appurtenant or attached to the land to which the water right was originally granted (A.R.S. §45-172). This provision was placed in the water law with the sweeping changes that took place in 1919, and applies to public domain and private property (Parker v. McIntyre, 47 Ariz. 484, 56 P2d 1337 1936). In effect, this doctrine of appurtenance held that the water right runs with the land, and once attached, it could not be made to do duty on any other land, except where the original land was washed away (Gillespie Land & Irr. Co. v. Buckeye Irr. Co., 75 Ariz. 377, 257 P2d 393, 1953), or it becomes impracticable to use the water economically or beneficially on the original lands (In re Determination of Relative Rights to Use of Waters of Pantano Creek, 45 Ariz. 156, 41 P2d 228, 1935). This doctrine was greatly relaxed in 1962 to provide that a water right could be severed from lands to which it was attached for irrigation and other uses, including recreation and wildlife purposes, without loss of priority if 1) approved by the department; 2) no vested water rights would be impaired; 3) the right was perfected and not lost by abandonment and forfeiture. If the water right is for lands within an irrigation district, the district's consent must be obtained (A.R.S. §45-172 L., 1962).

1.2.2 Acquisition of Right

General--
The exclusive method of acquiring an appropriation right is through compliance with the provisions set forth in section 45-142. This section states that:

A. Any person, including the United States, the state or a municipality, intending to acquire the right to the beneficial use of water, shall make an application to the department for a permit to make an appropriation of the water. The application shall state:
    1. The name and address of the applicant.
    2. The water supply from which the appropriation is applied for.
    3. The nature and amount of the proposed use.
    4. The location, point of diversion and description of the proposed works by which the water is to be put to beneficial use.

B. The application also shall set forth:
    1. If for agricultural purposes, the legal subdivisions of the land and the acreage to be irrigated.
    2. If for the power purposes, the nature of the works by which power is to be developed, the pressure head and amount of water to be utilized, the points of diversion and release of the water and the uses to which the power is to be applied.
    3. If for the construction of a reservoir, the dimensions and description of the dam, the capacity of the reservoir for each foot in depth, the description of the land to be submerged and the uses to be made of the impounded waters.
    4. If for the municipal uses, the population to be served, and an estimate of the future population requirements.
    5. If for mining purposes, the location and character of the mines to be served and the methods of supplying and utilizing the waters.
    6. If for recreation or wildlife, including fish, the location and the character of the area to be used and the specific purposes for which such area shall be used.

C. The application shall be accompanied by maps, drawings and data prescribed by the department.

An appropriator has been judicially defined as one who makes an application of public water on land he owns, said application to be for beneficial use (Gould v. Maricopa Canal Co., 8 Ariz. 429, 76 P. 598, 1904). The appropriator is entitled to a continuing right to the use of such waters that have been appropriated, but not beyond that reasonably required and actually used(Arizona v. California, 56S Ct. 848, 298 U.S. 558).

> An appropriation of water flowing on the public domain consists in the capture, impounding, or diversion of it from its natural course or channel and its actual application to some beneficial use (Gould v. Maricopa Canal Co. 8 Ariz. 429, 76 P. 598, 1904).

An appropriation was further defined by an early court as the intent to take, accompanied by some open, physical demonstration of the intent, for some valuable use and consummated without delay (Clough v. Wing, 2 Ariz. 371, 17 P. 453, 1888). Added to this are the requirements that the appropriated water be a specified amount, diverted for a beneficial use (State of Arizona v. State of California, 283 U.S. 423, 51 S. Ct. 522, 1931), and that only waters in their natural, as distinguished from artificial condition are appropriable (Fourzan v. Curtis, 43 Ariz. 140, 29 P.2d 722, 1934). The appropriator acquires a usufructuary right based on "first in time is first in right," which means the first person appropriating the water shall have the better right (A.R.S.§45-141 & 175).

In Arizona, the appropriation dates from the time a purpose to make an appropriation was definitely formed and actual work on a project had begun (A.R.S. §45-142 & 148). Mere notice of appropriation is ineffective (Sullivan v. Jones, 13 Ariz. 229, 108 P. 476 1910). The appropriator's right may "relate back" to the initiation of appropriation when diligence is exercised in applying appropriated water to beneficial use (Maricopa County Municipal Water Conservation Dist. No. 1 v. Southwest Cotton Co., 39 Ariz. 65, 4 P.2d 369 1931). As a general rule, actual construction on appropriation projects must begin within two years after approval of the application and must be completed within five years (A.R.S.§45-150).

Appropriation of public waters must be initiated by filing an application with the department and will be approved only if the application meets all statutory criteria. Once the water has been placed to a beneficial use, the applicant must submit proof of his appropriation in order to obtain a certificate (A.R.S.§45-142, 143 & 152). An application will be approved unless the proposed application will conflict with vested rights, is a menace to public safety, or is against the interests and welfare of the public (A.R.S.§45-143).

The state land department is authorized to determine the state of conflicting claims to water rights (A.R.S. §45-231). Notice of investigation of the claims must be published (A.R.S. §45-232), investigations carried out (A.R.S. §45-233), and notice of the hearing given to the claimants (A.R.S. §45-234). Upon hearing all the evidence an administrative determination will be issued which is conclusive (A.R.S. §45-240), unless a claimant exercises his right to appeal this determination to the Supreme Court (Salt River Valley Water Users' Ass'n v. Norvell, 29 Ariz. 499, 242 P. 1013 1926). Upon final determination, a certificate of right is issued (A.R.S. §45-241).

The criteria for approval is that the proposed right must be for a beneficial use and not be in conflict with a vested interest or the best interests of the public. An application may be approved for less water than applied for but will not be approved for more water than can be put to a beneficial use (A.R.S. §45-143). A permit may be assigned, subject to the conditions contained in the permit (A.R.S. §45-149).

Under an approved application, construction of works must begin within two years after the approval of the application (A.R.S. §45-150). Construction must be prosecuted with reasonable time, not to exceed five years from the date of approval. If good cause can be shown an extension may be granted by the department beyond the initial five year period (Ibid). Once the water has been placed to a beneficial use, proof of appropriation is submitted to the department and a certificate is issued which sets forth the details of the water right (A.R.S. § 45-154).

An applicant or any person whose rights are affected by a decision of the department may appeal to the superior court within 60 days after the decision. The superior court may modify a decision of the department if the department has abused its authority (Ibid). The court's review is limited to matters which were within the jurisdiction of the department to decide initially, and the right of a prior appropriator to appeal a department decision is limited because approval of a junior application cannot adversely affect a prior vested right (Ernst v. Superior Court of Apache Co., 82 Ariz. 17, 307 P.2d 911, 1957).

Once an adjudication of water rights has been initiated, the department makes a hydrographic survey of the water source, reviews claims and takes testimony (A.R.S. §45-231). A proposal is then submitted to the court and if a user objects to the department's proposed determination of individual rights, the court will make the actual adjudication of the rights (A.R.S. §45-239).

Eminent domain is granted to the owner of irrigable lands for the construction of a canal across the lands of another (A.R.S. §45-201). Corporations owning canals and reservoir systems must, to the extent of available capacity, carry water to the other users upon payment of carriage charges (Whiting v. Lyman Water Co., 59 Ariz. 121, 124 P. 2d 316 1942).

In 1974, Arizona enacted a potentially major addition to their water laws for improving the management capability of the state.[2] This law, called the Water Rights Registration Act, requires all persons using or claiming the right to withdraw and use public waters to file a statement with the state land department by June 30, 1977, claiming such water right (A.R.S. §45-181 A.L. 1974). Water right users whose permits or certificates are for water from the mainstream of the Colorado River, or from contract with the United States, court decree or adjudication are not required to comply with this law. A registry of water rights claims will be established containing the names of all claimants and dates relevant to their claim.

Ground Water--

Ground water in Arizona has been classified as either water in a definite and well defined underground channel, or as water percolating through the soil (Howard v. Perrin, 8 Ariz. 347, 76 P. 460, 1904; Maricopa County Municipal Water Conservancy Dist. No. 1 v. Southwest Cotton Co., 39 Ariz. 65, 4 P.2d 369, 1931).

Waters in a definite underground channel are subject to appropriation in the same manner as surface waters of a watercourse (A.R.S. §45-101). Percolating ground water is not public water subject to the appropriation doctrine and is considered as property of the owner of the soil (State v. Anway, 87 Ariz. 206, 349 P.2d 774, 1960). The doctrine of water law applied to this category of water is called the doctrine of reasonable use. The owner of the property must use the ground water supply underlying his land in a reasonable manner with respect to his use and other users in the area (Bristor v. Cheatham, 75 Ariz. 227, 255 P.2d 173, 1953).

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[2] The legislative intent was expressed: "The legislature recognizes that the future growth and development of the state of Arizona is dependent upon effective management and efficient use of the water resources of the state. The purpose of this act is to provide adequate records for efficient administration of the public waters of the state and to cause a return to the state of any water rights which are no longer exercised by putting such waters to beneficial use."

A critical ground water basin is a ground water area not having sufficient ground water to provide a reasonably safe supply for the irrigation of cultivated lands within the basin at current rates of withdrawal (A.R.S. §45-313).

What is a reasonable use of ground water depends upon such factors as the persons involved, the nature of the use, and examination of all the facts and circumstances pertinent to the issues, and a decision of whether the water is being taken in connection with a beneficial enjoyment of the land from which it is taken (Bristor v. Cheatham, 73 Ariz. 228, 240 P.2d 185, reversed on other grounds, 75 Ariz. 227, 255 P.2d 173). The law also prohibits wasting water from existing wells (A.R.S. §45-319).

Prescriptive Water Rights--
A use of water does not become adverse until a superior right is infringed upon, and the owner suffers a deprivation of water. Egan v. Estrada (6 Ariz. 240, 56 P. 721, 1899) held that if the above did occur then the adverse user was entitled to a prescriptive right from the continuous adverse use for the full period of limitation. The adverse user must show that his use was exclusive of any use by the rightful owner (Mullen v. Gross, 84 Ariz. 207, 326 P.2d 33, 1958), and that his use of the water was open, notorious and adverse (Gross v. MacCornack, 75 Ariz. 243, 255 P.2d 183, 1953).

Preferences--
Arizona Rev. Stats., Section 45-147, states that:

A. As between two or more pending conflicting applications for the use of water from a given water supply, when the capacity of the supply is not sufficient for all applications, preference shall be given by the department according to the relative values to the public of the proposed use.

B. The relative values to the public for the purposes of this section shall be:
   1. Domestic and municipal uses. Domestic uses shall include gardens not exceeding one-half acre to each family.
   2. Irrigation and stock watering.
   3. Power and mining uses.
   4. Recreation and wildlife, including fish.

In addition, Arizona Statutes (A.R.S. §45-141 & 143), provide that applications for municipal use shall be approved to the exclusion of all subsequent applications if it is determined that the estimated future needs of the municipality justify it.

1.2.3 Adjudicating Water Rights

The appropriation doctrine has always been the exclusive method of acquiring water rights in Arizona. Before 1919, a water right could be acquired in one of two ways. The first method was accomplished by a diversion of the water and its application to a beneficial use. The right was vested when the appropriation was complete. The second method consisted of posting and recording a notice at the county clerk's office, constructing the works and placing the water to beneficial use within a reasonable time. If the user had proceeded with reasonable diligence to complete his appropriation then the priority of the right related back to the date of the posting of the notice (Maricopa County Municipal Water Conservation Dist. No. 1 v. Warford, 69 Ariz. 1, 206 P.2d 1168, 1949). Subsequent to 1919, a permit is required. Water rights are adjudicated by the superior courts after the state land department prepares a hydrographic survey, identifies rights to be adjudicated and objectors have had the opportunity to appear and have their position taken into account (A.R.S. §45-231-245).

1.2.4 Conditions of Use

Beneficial Use--
Within the confines of Arizona law, beneficial use "includes but is not limited to, use for domestic, municipal, recreation, wildlife, including fish, agricultural, mining, stock watering and power purposes. The Arizona Supreme Court has held that water must be applied to some beneficial use in order to effectuate a valid appropriation (Fourzan v. Curtis, 43 Ariz. 140, 29 P.2d 722, 1934).

To determine water rights where the court held that it was incumbent upon an intervener to prove that he had made an appropriation by showing the quantity of water which he was beneficially using and the specific lands upon which such waters were used (Gillespie Land and Irrigation Co. v. Buckeye Irrigation Co. Loc. cit.):

A. The department shall approve applications made in proper form for the appropriation of water for a beneficial use, but when the application or the proposed use conflicts with vested rights, is a menace to public safety, or is against the interests and welfare of the public, the application shall be rejected.

B. An application may be approved for less water than applied for if substantial reasons exist therefore, but shall not be approved for more water than may be put to a beneficial use. Applications for municipal uses may be approved to exclusion of all subsequent appropriations if the estimated needs of the municipality so demand after consideration thereof and upon order of the department (A.R.S. §45-143).

Beneficial use is the basis, the measure and the limit of the right to use water (A.R.S. §45-101B), and once an appropriation of water is perfected, the owner has a vested right which cannot be interfered with (Adams v. Salt River Valley Water Users' Ass'n, 53 Ariz. 374, 89 P.2d 1060, 1939). This vested right in water is a right to use the flow of the watercourse, but it is not a private ownership of the stream itself (Wall v. Superior Court, 53 Ariz. 344, 89 P.2d 624, 1939). The priority of a water right is absolute since the first in time is the first in right (Hunning v. Porter, 6 Ariz. 171, 54 P. 584, 1898), subject to an exercise of taking by a preferred use under A.R.S. §45-147.

Although "beneficial" has not been specifically defined in statutory law it generally contemplates a reasonablly efficient use, the antithesis of waste. This seems to be fairly easy to comprehend, but the Arizona Court of Appeals clouded the definition by its decision in Salt River Valley Water Users' Association v. Kovacovich (3 Ariz. App. 28, 411 P.2d 201, 1966). In that case the court held that a landowner who had instituted water saving practices on his land had no right to use that water which was saved on adjacent ground. The water saving practices included improving and concrete lining ditches. These practices resulted in a conservation of water and controlled weed and vegetation growth along the ditches and reduced maintenance costs. Therefore, the right of an appropriator is limited to that quantity of water which can be beneficially used, and the "court is of the opinion that the Doctrine of Beneficial Use precludes the application of waters gained by water conservation practices on lands other than those to which the water was originally appurtenant" (Ibid., 411 P.2d at 206).

It was observed by the court that if they accepted the position of the irrigators who instituted the water saving practices, this could allow the water users to let the land with the water right lie fallow, and use the water on other land. The court stated that, however commendable and beneficial to the soil, and regardless of the economic and conservation gains from water saving practices, these practices do not justify altering the water law doctrine in the state. Specifically, the court went on to say:

> Any practice, whether through water saving procedures or otherwise, whereby appellees (water users) may in fact reduce the quantity of water actually taken inures to the benefit of other water users and neither creates a right to use the waters saved as a marketable commodity nor the right to apply same to adjacent property having no appurtenant water rights. It is believed that any other decision would result in commencement of return to the very area of confusion and chaos which gave rise to the development and application of the concept of beneficial use (Ibid, 411 P.2d at 206).

As a result of the decision, a user could only appropriate an amount of water that can be beneficially used upon the land to which the water is appurtenant, but in practice this amount may be less than the maximum amount of their appropriation if an efficient delivery system is subsequently constructed. The appropriator cannot take the excess waters and beneficially use them upon other lands.

Does the Kovacovich decision mean that the carriage water in Arizona ditches will go to waste even though it is worth saving? If the diligent irrigator cannot use the water which is saved through his water saving practices, then presumably he will continue his waste by not lining his irrigation ditches. If the water which is saved cannot be used by the person lining the ditch, it will continue downstream as positive externality to other users. Theoretically, downstream users might pay the upstream user to line his ditch in order to gain water for their appropriations. But in practice, the decision does not provide an incentive for increased efficiency in water delivery and use. The court said Kovacovich could have applied for a permit for the "saved waters," which in theory sounds practical. But the right to use this water would have a priority date no earlier than when the saved water was put to beneficial use (1933), or when the application was filed. It would not be the early date of the original water right. The consequence in water-short Arizona would be a nearly worthless water right.

Waste Water--

Waste water is that water which results from excessive diversions or applications and accumulates in tailwater control ditches at the ends of fields, barrow pits, ponds along canals, or otherwise finds its way back to the river, lake or underground waters. They are waters that are directed under the exercise of a valid water right. They are now lost under current practices, but might be saved (Dewsnup, 1973).

When waste water runs upon the lands of another, a man may capture and use it, but that is the extent of his right (Wedgeworth v. Wedgeworth, 20 Ariz. 518, 18P P. 952, 1919). In Lambeye v. Garcia (78 Ariz. 178, 157 P. 977, 1916), the Arizona Supreme Court said that a prior user can cease his use of water, alter it, or temporarily suspend it without infringing upon the rights of any person who subsequently uses the waste water from the prior use. The court went on to hold that the plaintiff (waste water user) could not prohibit an irrigation company from diverting waste water from his premises, because the plaintiff had no vested rights in such water, for it is within the power of the irrigation company to conserve such water even though it had not been personally recaptured by the appropriator from whose land the plaintiff had originally received it.

Thus, subsequent users of waste water cannot complain if this source is curtailed or eliminated. If the subsequent users could establish legal rights in the source of supply of such waste water, it would freeze the pattern of use of the prior user so as to prevent him from changing, modifying, or otherwise adopting a more efficient method of using the water.

To encourage users to be efficient and to prevent waste, Arizona law provides that "a person is guilty of a misdemeanor who wilfully wastes water to the detriment of another" (A.R.S. §45-109).

1.2.5 Manner in Which Rights May Be Adversely Affected

Forfeiture and Abandonment--

When the owner of the right to use water fails to use the water for five successive years, the right ceases and the water reverts back to the public and is subject to appropriation (A.R.S. §45-101c). In Gila Water Co. v. Green (29 Ariz. 304, 241 P. 307, 1925), the Arizona Supreme Court distinguished between abandonment and forfeiture. Abandonment requires an intent to abandon the right coupled with an actual nonuse. Such intent can be found in the declarations of the appropriator or by his acts (Gould v. Maricopa Canal Co., 8 Ariz. 429, 76 P. 598, 1904).

The intention of the user is not an essential element of forfeiture, thus there can be a forfeiture against the intentions of the user. Nonuse of the water during the statutory period is the governing factor (A.R.S. §45-101c).

Adverse Possession--

A use of water cannot become adverse unless it infringes on a superior right and actually deprives the superior owner of his water. Prescriptive right will arise only by a continuous adverse use for the full period of limitation (6 Ariz. 248, 56 P. 721, 1899). The use must be open, notorious and adverse (Gross v. MacCornack, 75 Ariz. 243, 255 P.2d 183, 1953), and the adverse user has to show that his use was exclusive of any use by the rightful owner (Mullen v. Gross, 84 Ariz. 207, 326 P.2d 33, 1958).

Condemnation--

In a context relating to real property, condemnation is a process by which the property of a private owner is taken for public use, without his comment, but upon the award and payment of just compensation (Jones v. Oklahoma City, 192 Okl. 470, 137 P.2d 233). Water rights may be condemned where a chance is contemplated in the use of appropriated water. A preferred user may condemn a prior right of a lower or non-preferred use if just compensation is paid.

Enforcement of Beneficial Use or Waste Concepts--

An appropriator is limited to the quantity of water specified in his permit that is being beneficially used and any unused water is subject to the forfeiture statute. Beneficial use is the "basis, the measure and limit to the use of water" (Ariz. Const. Art. 17, Sec. 2). It follows that no appropriation is valid unless it is pursuant to a beneficial use (Clough v. Wing, 2 Ariz. 371, 17 P. 453, 1888; Gould v. Maricopa Canal Co. 8 Ariz. 429, 76 P. 598, 1904; State of Arizona v. State of California, 283 U.S. 423, 51 S. Ct. 522, 1931; Whiting v. Lyman Water Co., 59 Ariz. 458, 129P.2d 995, 1942). Beneficial use was defined by statute in 1974 to "include, but is not limited to, use for domestic, municipal, recreation, wildlife, including fish, agriculture, mining, stock watering and power purposes" (A.R.S. §45-180, L. 1974).

It is public policy of Arizona to make the largest possible use of the water within its boundaries (Pima Farms Co. v. Proctor, 30 Ariz. 96, 245 P. 369, 1926). To this end, the superintendent of each water district is charged with regulating waters within his district to apportion the resource according to right and to prevent waste (A.R.S. §45-106 (4), 1956). An early court decision held that an irrigation company could conserve surplus or wasted water as there was no vested property right in this unappropriated water (Lambrey v. Garcia, 18 Ariz. 178, 157 P. 977, 1916; Wedgworth v. Wedgworth, 20 Ariz. 518, 181 P. 952, 1919). However, the picture was clouded by the Kovacovich decision holding that waters gained by conservation practices was to be applied only to the land to which it was originally appurtenant (Salt River Valley Water Users' Ass'n v. Kovacovich, 3 Ariz. App. 28, 411 P.2d 201, 1966). The net result being, seepage losses may be reduced, but excessive amounts of water may end up being applied on the land, a substitution of seepage for deep percolation and tailwater runoff.

1.2.6 Legal Incentives and Disincentives for More Efficient Water Use Practices

Irrigation Return Flow--

Return flow waters are those waters which return to a natural stream after use, and which may become subject to vested rights of downstream users. Irrigation return flows occur from deep percolation from the over-application of water to the land, seepage from conveyance systems and tail water runoff.

In Arizona Copper Co. v. Gillespie (100 P. 465, Ariz. 1909), the court stated that under the doctrine of appropriation of water, he who is the first in time is the first in right, and so long as he continues to apply the water to a beneficial use, subsequent appropriators cannot deprive him of the right of his appropriation, either by diminishing the quantity or deteriorating the quality. A downstream senior appropriator is entitled to have the stream flow in a sufficient quantity to satisfy his appropriation. Thus an upstream junior appropriator cannot use water if that use would deprive the downstream senior of the appropriated quantity.

In Gillespie Land and Irrigation Company v. Narramore (93 Ariz. 67, 378 P.2d 745, 1963), the Arizona Supreme Court held that where a junior appropriator, who sought to modify a decree to allow refusal of water into its canal when mineral or salt content was excessive, failed to prove that salinity would injure or damage land so that raising crops would be materially affected, even though the salinity had increased since the time of the prior decrees.

The waters from both parties were taken into a canal from a dam. The waters were carried from the canal to Gillespie land and Narramore's water was diverted from the canal into a wash and to Narramore's ditch. In this case, upstream activities coupled with a drought cycle contributed to the decreased flow of the Gila River and increased its salinity. Evidence indicated that during periods of low flow almost all the water in the river came from tail or waste waters. During this period the saline content became critical. Evidence adduced at trial indicated that when the salts became 65% sodium chloride it was classified as irrigation sewage and not as irrigation water. In this instance the plaintiffs did not show damage to crops and the court held for the defendants.

Arizona has no statute which allows an appropriator to reclaim used water nor any statutory command for an appropriator to conduct surplus water back to the stream from which it was taken. It has been recognized that:

> not all irrigation water in excess of consumptive use is lost to the system. In many cases the water is returned to the stream as stream flow or it serves to recharge ground water and excess water is needed in almost all irrigated areas to leach salts from the soil (National Water Commission, Water Policies for the Future, p. 305, 1973).

Salvaged and Developed Waters--

In Salt River Valley Water Users' Association v. Kovacovich (loc. cit.), the Arizona court held that an appropriator who practiced water saving practices by lining his ditch was not entitled to use the water which was saved. Fortunately, the Kovacovich decision is not the majority opinion among the western states (see Little Cottonwood Water Co. v. Kimball, 76 Utah 243, 289 P. 116, 1930; and Glen Dale Ranches, Inc. v. Shaub, 94 Ida. 585, 494 P.2d 1029, 1972, penalizing a water user for losses in his delivery system).

Provisions for Transfer of Water Rights and Diversions

Under the law of 1919, water rights in Arizona were made appurtenant to lands specified in the water right except that a transfer to other lands would be permitted where it became beneficially or economically impracticable to continue irrigating on the original lands (A.R.S. §45-172). The law was relaxed in 1962 to provide that a water right may be severed from the land to which it is appurtenant and transferred to other uses without a loss of priority (A.R.S. §45-172, 1974). A change application must be filed with the department and after notice and a hearing the department will approve of the transfer if other vested rights are not affected. The section also provides numerous conditions for changes of irrigation rights within district borders:

> No such severance or transfer of water rights shall be permitted or allowed from lands within the exterior boundaries of any irrigation district, agricultural improvement district or water users' association without first having obtained the written consent and approval of such irrigation district, agricultural improvement district or water users' association.
>
> No right to the use of water on or from any watershed or drainage area which supplies or contributes water for the irrigation of lands within an irrigation district, agricultural improvement district or water users' association shall be severed or transferred without the consent of the governing body of such irrigation district, agricultural improvement district or water users' association. All proposed applications for the severance and transfer of a right to use water of or from any watershed or drainage area which supplies or contributes water for the irrigation of lands within any irrigation district, agricultural improvement district or water users' association shall be submitted to the governing body of such irrigation district, agricultural improvement district or water users' association prior to the filing of such application with the department. Within forty-five days after the receipt thereof, such governing body shall reject or approve the proposed application. Failure of such governing body to approve or reject the proposed application within forty-five days after receipt thereof shall constitute approval of the proposed application by such governing body. No application for the severance or transfer of a right to the use of water of or from any watershed or drainage area which supplies or contributes water for the irrigation of lands within any irrigation district, agricultural improvement district or water users' association shall be accepted for filing by the department unless accompanied by the written consent of the governing body of such irrigation district, agricultural improvement district or water users' association to the proposed application or by satisfactory evidence that such governing body failed to either accept or reject the proposed application within forty-five days after receipt thereof by such governing body.
>
> A severance and transfer of an irrigation water right appurtenant to lands within the boundaries of an irrigation district to other lands within the boudaries of the same irrigation district for agricultural use may be accomplished by the exclusion of lands to which a water right is appurtenant from within the boundaries of an irrigation district, and the inclusion in lieu thereof of other lands within the boundaries of such irrigation district. Such severance and transfer of a water right shall require the consent of only the irrigation district within which the affected lands are situated and of the owners of the lands affected by the severance and transfer. No proceedings before nor approval by the department shall be required to accomplish such severance and transfer.

A natural waterway may be used to carry such waters if it can be done without causing damage or interfering with the natural flow (A.R.S. §45-173). One has the right to change the place of storage or diversion if other users' rights are not impaired (A.R.S. §45-232). The source of supply can likewise be changed if the quality of water is not lowered (Adams v. Salt River Valley Water Users' Ass'n, 53 Ariz. 374, 89 P.2d 1060, 1939).

By setting on the public domain and making improvements by developing and putting water to use, an appropriator acquires an interest in the water which is subject to conveyance (A.R.S. §45-233).

1.2.7 Water Disposal and Drainage

Diffused surface waters have been characterized as water falling upon the land from seasonal rains or melting snows (Kirkpatrick v. Butler, 14 Ariz. App. 377, 483 P.2d 790, 1971). Once these waters have reached a stream or wash with a well-defined channel a loss of identity occurs and the diffused surface water becomes waters of the watercourse subject to appropriation (City of Globe v. Shute, 22 Ariz. App. 282, 196 P. 1024, 1921). Prior to the water reaching a natural watercourse, however, a landowner cannot collect the diffused waters in an artificial channel and discharge it in large quantities upon the land of a lower landowner (Tucson v. Koober, 82 Ariz. 347, 313 P. 411, 1957).

When floodwaters escape their watercourse and flow over adjoining land, the landowner may divert such waters from his land as a common enemy (Gillespie Land and Irrigation Co. v. Gonzalez, 93 Ariz. 152, 379 P.2d 135, 1963). The property of the lower landowner is burdened with an easement in favor of the upper landowner to receive those surface waters which naturally drain from higher to lower ground (Vantex Land and Development Co. v. Schnepf, 82 Ariz. 54, 308 P.2d, 1947).

1.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

1.3.1 State Water Agencies

General administrative supervision and control of waters are placed in the state land department which is headed by the state land commissioner:

> The state land department shall have general control and supervision of the waters of the state and of the appropriation and distribution thereof, except distribution of water reserved to special officers appointed by courts under existing judgments or decrees (A.R.S. §45-102).

To aid in the distribution of water the state land department shall divide the state into water districts, taking into account drainage watersheds (A.R.S. §45-105). This is done in order to secure the best possible protection to water users and insure the most economical supervision by the state (Ibid). A superintendent is appointed for each district who regulates and controls headgates and control structures (A.R.S. §45-105B). It is a misdemeanor to use water without a proper right or to interfere with a proper distribution of water or to open or close a headgate or control structure without authority (A.R.S. §45-109).

The state land department also conducts investigations of water resources of the state to determine their extent and potential development (A.R.S. § 45-103). Supervision of the construction of dams and reservoirs is placed in the hands of the state water engineer, who is appointed by the Arizona Water Commission (A.R.S. §45-505). Before the construction of a dam or reservoir may be commenced, written approval of the plans and specifications must be obtained from the state water engineer (A.R.S. § 45-703).

Statutory provisions are available for the resolution of water user conflicts (A.R.S. §45-231 to 245). The state land department may initiate a determination of the various rights to the use of a water source, either on its own initiative or upon a petition of one or more users (A.R.S. §45-231). Action can be brought in a state court for an adjudication of water rights but the court may transfer the matter back to the department (Ibid). Conclusion of adjudication witnesses the issuance to each user of a certificate evidencing his water right. A procedure exists to have a preliminary evaluation of existing rights in relation to new appropriations at the time a water right is initiated. In order to approve a new filing, the commissioner must find that the proposed use will not interfere with other vested rights. A prior appropriator can commence injunctive proceedings (Salt River Valley Water Users Ass'n v. Kovacovich, 3 Ariz. App. 28, 411 P.2d 201, 1966), to protect his rights or sue for damages if he is deprived of his water by another user (Lane v. Mathews, 74 Ariz. 201, 245 P.2d 1025, 1952).

The Arizona Water Commission prosecutes and defends Arizona's rights and claims to interstate streams and formulates plans and develops programs for the development and conservation of the waters of the state in coordination with other state agencies (A.R.S. §45-502). The following public organizations and districts may be created: Agricultural Improvement Districts (A.R.S. §30-101 to 228), Drainage Districts (A.R.S. §45-1201 to 1396), Electric Districts (A.R.S. §30-501 to 600), Flood Control Districts (A.R.S. §45-2301 to 2370), Irrigation Districts (A.R.S. §45-1501 to 1866), Power Districts (A.R.S. §30-301 to 433), and Irrigation Water Delivery Districts (A.R.S. §45-1901 to 1956).

1.3.2 Judicial Bodies

Arizona does not have special water courts. The first level of judicial bodies that deal with water law is the superior courts where applicants appeal department decisions. The superior court receives the department's evidence and order for judicial hearing and review. The department's determination remains in full force during the court proceedings.

1.3.3 Water Users and Their Organizational Structure

Individuals--

This term denotes a single or natural person as distinguished from a group or class, partnership, corporation, or association (Black's Law Dictionary, 4th Ed.). The purpose in providing for appropriation of waters is to subject waters of the state to acquisition of rights of diversion and use by the public. The word "persons" who may appropriate water includes the United States, the state, or a municipality (A.R.S. §45-142).

Companies--

A water company organized to divert and carry water for irrigation without being the owner or possessor of irrigable land does not become, by diverting and carrying water from a stream, the appropriator of the water (8 Ariz. 429, 76 P. 598, 1904).

Districts--

Water districts in Arizona include Improvement Districts (A.R.S. §45-901 to 1047), Drainage Districts (A.R.S. §45-12-01 to 1396), Irrigation Districts (A.R.S. §45-1501 to 1866), and Irrigation Water Delivery Districts (A.R.S. §45-1901 to 1956).

The purpose of Improvement Districts is set forth in §45-903, which provides that when five or more holders of title to agricultural lands within a United States reclamation project, and these lands are susceptible of irrigation, then such holders of title can "secure all or a portion of the water necessary to irrigate the lands," provide for storage, regulation, control or distribution of the water, provide for the development of additional waters, provide for drainage of lands, etc.

Irrigation districts organized under A.R.S. §45-1501 to U.S. 1866 are corporations of a public purpose, and while subdivisions of the state, differ from counties, and like political units in that they function for profit of the inhabitants; are purely business and economic oriented, and do not have political nor governmental purposes (Taylor v. Roosevelt Irr. Dist., 72 Ariz. 160, 232 P.2d 107, 1951). In addition to having rights and duties to deliver water to the lands in the district, which is considered a proprietary function, the district is liable for its negligence in carrying out its duties (Ibid).

If there is insufficient water to supply all lands of the district, then the board of directors have the authority to provide for the distribution of available waters in equal proportions (A.R.S. §45-1589).

Sections A.R.S. 45-1502 state that the district does not have the authority to divert the water of a river, creek, stream, canal or reservoir to the injury or damage of any person or persons having a prior right to such water, prior to such time as the amount of the injury or damage has been ascertained and paid to the party who is injured thereby, in proceedings under the laws of the state relative to the taking of private property for public use.

Irrigation water delivery districts can be organized whenever a majority of landowners of lands entitled to, or capable of receiving, irrigation water from the same ditch or conveyance system, wish to provide delivery to their lands (A.R.S. §45-1911). The Irrigation Water Delivery District, provided for under domain, can contract, can sue and be sued in its corporate name, can acquire, hold and dispose of all real and personal property (A.R.S. §45-1902). Failure to use irrigation water for five years or more does not constitute abandonment or precipitate a forfeiture of water rights as long as the district taxes are paid (A.R.S. §45-1903).

1.4 POLLUTION CONTROL

Water quality control is vested in the State Department of Health and the State Water Quality Control Council (A.R.S. §36-1851 to 1868). The Council can adopt reasonable standards of water quality to prevent, control, and abate pollution. The Council also establishes and enforces water quality standards and issues orders regarding the control of irrigation and drainage waters.

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APPENDIX A REPORT 2

CALIFORNIA

2.1 HISTORICAL BACKGROUND

The system of water in California is a complicated mixture of riparian and appropriation rights doctrines, along with a few Pueblo water rights which originated in Spanish and Mexican law, and which give preference to certain municipal rights.[1]

Riparian rights, as recognized by the common law of England, were accepted as a part of the common law of California (Black's Law Dictionary, 4th Ed., 1968). In 1850, which was the year of California's admission to the Union, the legislature adopted the common law of England as a rule for judicial decisions. This common law as adopted included the English water rights doctrine of riparian ownership. From 1855 to 1884, there were many judicial decisions on water rights involving riparian-type claims. During this period, riparian rights were upheld over diversion claims, even for the use of water on nonriparian lands and the requirement of contiguity of land to the stream for a riparian right was established.[2]

Even when the appropriation doctrine had been judicially recognized in California (Irwin vs. Phillips, 5 Cal. 140, 1855), vested riparian rights were superior to and could not be divested by appropriative use, even though the appropriated rights were recognized in many situations. In 1884, the leading case of Lux v. Haggin (69 Cal. 255, 384-387, 4 P.919, 1884; 10P 675, 1885) established the supremacy of the riparian doctrine by holding that the state had adopted the doctrine of riparian rights as part of its common law in 1850. In Lux, the California Supreme Court set forth the standards by which the two doctrines could be applied in determining the priority of rights. These were: (1) the source of title to the lands; and (2) the date of title to land, or commencement of water use. Appropriated rights were recognized on federal lands and as between two users of water on federal land, the first to commense use, has priority.[3] No riparian right would be recognized because there was no private riparian land. It was only after the land passed to private ownership by patent, that riparian rights could be acquired. The rule was that, as between a patentee of federal lands in a riparian claim, and an appropriator, the dates of appropriation and patent controlled. Riparian rights were superior only to those appropriated rights acquired after the date of patent. As to lands acquired by patent from the state, the same general rule applied. When California was granted land from the United States, it received riparian rights as an incident of that grant, and these rights in return were transferred to private patentees. With the adoption of the California civil code in 1872, the state provided a formal procedure for acquiring appropriative rights and waived any superiority of the state's own riparian claims. Thereafter, any appropriation perfected prior to a patent from the state was superior to riparian claims by the patentee.

A case decided in 1926 (Herminghaus v. So. California Edison Co., 200 Cal. 81, 252 P.607, 1926), in which the California Supreme Court upheld a riparian claim against that of an appropriator notwithstanding the wastefulness of the riparian use, prompted the Constitutional amendment of 1928 (Cal. Const. Art. XIV, §3), which requires all uses of water in the state to be "reasonable-beneficial." This amendment has no effect on the priority of uses, except where a use would not be reasonable-beneficial as defined by the courts. So, as between appropriators and riparians on the same water course, riparians have paramount rights except as limited in the case of Lux v. Haggin, and in the grants of the land to California. Even though the riparian user has a paramount right which includes reasonable prospective use, an intervening appropriative use is permitted pending future riparian use (51 Cal. Jur. 2nd 635, Water, §176). Thus, the senior appropriator has rights to use to the extent of his permit where water is available beyond the reasonable needs of riparians on the watercourse.

As has been pointed out, the 1928 Constitutional amendment added the limitation of reasonable beneficial use to a water right. The effect of this addition has been to place a serious limitation on any water right. For example, in Joslin v. Marin Municipal Water District (67 Cal. 2d 132, 429 P.2d 889, 1967), the use of water to carry suspended rock, gravel and sand to riparian land, where the plaintiff owned and operated a rock and gravel business, was held to be unreasonable as a matter of law, and that the plaintiff's riparian claims could not preclude an upstream appropriation by the defendant. The court applied this reasoning even though the plaintiff's land had been patented prior to the defendant's appropriation. The court relied upon the restrictions imposed by the 1928 amendment which had previously been held applicable to riparian rights (see Peabody v. Vallejo, 2 Cal. 2d 352, 383 40 P.2d 486, 1935). Thus, the 1928 amendment provides an exception to the rule of Lux v. Haggin, which recognized the supremacy of the riparian doctrine.

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[1] The Pueblo right is a recognition of rights of municipalities under Spanish and Mexican law to hold rights within the Pueblo for domestic, irrigation and other uses. The right has a priority to certain uses which stems from the municipality's Pueblo status under Spanish and Mexican law.

The Pueblo right extends to all surface and underground waters of a stream that flowed through the original Pueblo, including all waters from the source of the mouth of such a stream. The rights are determined by the needs of the inhabitants of the city.

To have a Pueblo right, the city must have been a Pueblo under Spanish or Mexican law, there must be a need for the water, and a use and there must be a judgment recognizing Pueblo rights. To date, only Los Angeles and San Diego have established Pueblo rights. See San Diego vs. Cuyamaco Water Co., 209 Cal. 152, 287 P.496, 1930; and Los Angeles vs. Glendale, 23 C2d 68, 148 P.2d 289, 1943, for the cases settling for the above principals.

[2] See Pope vs. Kinman, 54 Cal. 3, 4-5, 1879, for a case upholding riparian right over appropriative right on nonriparian land, and Heinlen vs. Fresno Canal & Irr. Co., 68 Cal. 35, 8P.513, 1885, for the requirement of contiguity of land to a stream for a riparian right.

[3] A possible exception to this is pointed out in the Meyers and Tarlock, 1971 at 152, where the point of diversion for a prepatent appropriation was on land not then part of the public domain.

There is another exception to the Lux v. Haggin rule, which can be found in prescriptive rights. At this time, it is sufficient to say that in California, as in some western states, a right may be lost by nonuse. For practical reasons, and because of the prescriptive rights referred to above, riparian ownership does not dominate water rights and uses in California today. It is still a viable and recognized source of strength, however, in any litigation over water rights. And even though these rights have been limited by judicial, legislative, administrative, and constitutional restrictions, they still remain valuable property rights (see United States v. Gerlack Livestock Co., 339 U.S. 725, 752-755, 1950). It has been noted by one source that almost all riparian rights existing today, that is riparian stream waters, have been acquired by grant, prescription, appropriation, condemnation, or contract from the riparian owner's or abridged by the policy of the reasonable beneficial doctrine of the 1928 constitutional amendment (Rogers and Nichols, 1967, Vol. 1, pp. 216-217).

Many of the legal protections available in California originated in the gold rush days. Not the least important of these was the recognition of appropriative water rights.[4]

Early miners and immigrants to California formed communities applying their own standards of fairness in apportioning water, a commodity more important, or at least as important, to them as gold. Their standard for land as well as water was "first come, first served," with priority to the diligent (Rogers and Nichols, 1967). Prior to the passage of the Water Commission Act of 1933, there were several ways of obtaining an appropriative water right.[5] Since the passage of the Water Commission Act of 1933, however, appropriation rights may be obtained only by complying with the statutory procedures contained in the Water Commission Act (C.W.C. §1225).[6] Administration of this Act has been delegated to the State Water Resources Control Board (C.W.C. 175 et seq.). This appropriation doctrine as recognized in California first applied only to mining claims, but was later expanded to cover other uses. In attempting to find the basis for the new right, the California courts first looked to equity, and to real property law to find a solution to water problems which were not readily determinable by established riparian water right concepts. The courts finally settled upon the real property law of prescription, or presumptive license as the basis of the legal right.[7] Since the Federal Government as owner of the land had the rights to the water, but was not a party to the water disputes, the sole question presented in the early disputes was which party had the best right of possession. In assessing these rights, the doctrine which came out of the cases is that the owner which was the first in time was the first in right, therefore having the better right of possession. Since judicial determination established the property basis of the appropriation right, the California Legislature saw fit to codify it by statute (C.W.C. 102).

2.2 SUBSTANTIVE LAW

2.2.1 Property Right in Water

All water within the state is the property of the people (C.W.C. 102), and water flowing in a natural stream is not subject to private ownership. In Ivanhoe Irr. Dist. v. All Parties (Cal. 306 P.2d 824, 1957), the court held that the state is the holder of legal title as trustee for benefit of people of the state, all of whom in final analysis are water users of the state. Therefore, all waters of the state are held in trust and the beneficiaries of such trust are water users of the state, among whom are present and prospective users.

Early in the state's history, the California Supreme Court observed that the right of property in water flowing in a stream is not in the corpus of the water, but it is a usufructuary right and continues to exist only with possession (Eddy v. Simpson, 3 Cal. 249, 58 Am. Dec. 408, 1853).[8] This concept is applicable to riparian as well as appropriative rights (Rancho Santa Margarita v. Vail, 11 Cal. 2d 501, 81 P.2d 553, 1938).

While a water right in California is held to be a usufructuary right (Rank v. Krug, 90 F. Supp. 733), there is no property right in an unreasonable use, thus where an unreasonable use does exist, there is no taking or damaging of the property by the deprivation of such use and no damage award is warranted (Joslin v. Marin Municipal Water Dist, 429 P.2d 889, 1967 Cal.).

In Shurtleff v. Bracken (163 Cal. 24, 124 P.724, 1912), the California Supreme Court held that the plaintiff in that case had stated facts which constituted a good cause of action to quiet title to stream water as part of his real estate, such water being a parcel of the riparian land and as such was inseparably annexed to it. However, in E. Clemens Horst Co. v. New Blue Point Co. (117 Cal. 631, 171 P. 417, 1918), the California Supreme Court dealt with the question of whether an artificial addition to the flow of a natural stream, which had originated in another watershed, inured to the benefit of riparian owners or could be appropriated. The court held for the appropriator and stated that even though a riparian owner has a right to the usufruct of the natural flow, the appropriator of the artifically added waters was the taker of the corpus of that which exists in the stream by virtue of its abandonment.

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[4] For a discussion of some of the history leading to the recognition of appropriative rights, see Irwin v. Phillips, 5 Cal. 140, 1855. This was the first case in the United States to recognize the appropriation doctrine and since the appropriation doctrine originated in the United States, it is a genuine contribution to the common law.

[5] After adoption of the civil code in 1872, an appropriative right could be obtained by posting a notice of intent to appropriate at the place of diversion and recording this claim in the manner that a mining claim was perfected. Prior to 1913, and the adoption of the Water Commission Act, an appropriative right could be obtained by diversion and use of water (Duckworth v. Watsonville Water & Light Co., 158 Cal. 206, 110 p. 927, 1910).

[6] See also Crane v. Stevinson, 5 Cal. 2d 387, 398.54, 1936).

[7] Prescription refers to the loss of a property right through nonuse of the original owner and by open, notorious use by the one claiming the right. Presumptive license is a similar doctrine allowing use of property to continue as a result of long use but title does not pass to the new user.

[8] See also Palmer v. Railroad Commission, 167 Cal. 163, 138 P.997, 1914).

Appropriative rights are private property rights to divert a specified quantity of water, undiminished materially in quantity and quality for actual beneficial uses subject to certain limitations (*Joerger v. Pacific Gas and Electric Co.*, 207 Cal. 8, 276 P. 1017, 1929). In spite of the history connecting them with government lands and the rights of patentees, appropriative water rights are private property (*Thayer v. California Development Co.*, 164 Cal. 117, 128 P.21, 1912). However, it has also been stated that water rights are species of real property (*Locke v. Yorba Irr. Co.*, 35 Cal. 2d 205, 217 P.2d 425, 1950), or that they are an interest in realty (*Wright v. Best*, 19 Cal. 2d 368, 121 P.2d 702, 1942). As real property, appropriative rights are appurtenant to the land (*Ibid.*), that is to say, the water rights would pass with a conveyance of the land (*Stanislaus Water Co. v. Backman*, 152 Cal. 716, 93 P.858, 1908); however, water rights can be reserved from the conveyance (*Locke v. Yorba Irr. Co.*, loc. cit.).

The general rule is that one who diverts water pursuant to a valid right of diversion and use becomes the owner of the particles of water (*Parks Canal and Min. Co. v. Hoyt*, 57 Cal. 44, 1880). The right of usufruct in the water is subject to a reasonable use and consumption for domestic and other purposes (*Big Rock Mutual Water Co. v. Valijermo Ranch Co.*, 78 Cal. App. 226, 248 P. 264, 1926). The right which an appropriator acquires is a private property right, subject to ownership and disposition (*Thayer v. California Development Co.*, 164 Cal. 117, 128 P.21, 1912). This right is a substantive and valuable property right (*McDonald v. Bear River and Auburn Water and Min. Co.*, 13 Cal. 220, 1859). This right is not title to the corpus of the water, but merely rights to use of the water (*California v. Rank*, 293 F.2d 340, 1961).

2.2 ACQUISITION OF RIGHTS

2.2.1 *Surface Waters*

Riparian Rights--

No permit is required for riparian use ("Regulations and Information...", p. 62). Riparian rights are private real property rights to the beneficial use of water from a natural watercourse or stream contiguous to the land to which the rights attach (*Chowchilla Farms Inc. v. Martin*, 219 Cal. 1, 25 P.2d 435, 1933). A riparian right exists by reason of ownership of land abutting upon a stream or body of water and affords no basis of right to use water upon nonriparian land (*Rancho Santa Margarita v. Vail*, loc. cit.).

The only procedures pertaining to the perfection of the riparian rights are those relating to acquisition of riparian land or of severed water rights. Thus, the procedures established by Congress for acquiring land titles from the government are controlling for initial acquisition of riparian rights on patented land. Once title to the riparian land or severed right is acquired, the riparian right is established regardless of present use (*Parker v. Swett*, 188 Cal. 474, 205 P.1065, 1922), since the right is perpetual, subject to loss by prescription, transfer, condemnation, or estoppel (*Lux v. Haggin*, op. cit.; and *San Diego v. Cuyamaca Water Co.*, 209 Cal. 105, 287 P. 475, 1930). Thus, title to riparian rights may be obtained only by purchase of riparian land, or purchase of riparian rights which have been severed from the riparian land (Hutchins, 1965, p. 1220). The right is a part and parcel of the land and is appurtenant thereto unless lost by prescription or is transferred. Riparian rights have been held to inhere in the lands acquired by grant from the United States and Mexico and from the state of California, which were contiguous to streams. Although riparian rights do not vest at the time that land passes from government ownership (*McKinley Bros. v. McCawley*, 215 Cal. 229, 9 P.2d 298, 1932; *Lux v. Haggin*, loc. cit.), the California courts have held that an occupant of public land contiguous to a watercourse who has the intent to put the water to use on his land acquires rights equivalent to riparian owners' of private lands as the right accrues at the time of occupancy.

There is no California statute defining riparian rights, but a modification of the common law doctrine of riparian rights has been established in the state of California by court decision and confirmed by the provisions of Article 16, Section 3, of the State Constitution.[9] Lands within the watershed of a natural watercourse which are traversed by that watercourse or border on it are riparian lands and each such owner has a right to share in the reasonably beneficial use of the natural flow of water which passes his land ("Regulations and Information...", 1973, p. 62).

The extent to which riparian lands extend is important to note. Three factors determine the extent of riparian lands: (1) the land must be contiguous to the watercourse; (2) it must be within the same watershed; and (3) their riparian right extends only to the smallest tract held under one title in the claim of title, leading to the present owner.[10]

A riparian owner has the right to use a reasonable quantity of water on his lands subject to correlative rights and other riparians along the same watercourse. The quantity of water cannot be absolutely stated as it will depend on the physical supply and the reasonable use of other riparians making demands upon the same source. The situation is complicated by the addition of appropriative and Pueblo rights to use water in the stream in California. Even among riparian users, there is a hierarchy of uses between the users.[11]

Some limitations on the acquisition of riparian rights should be noted here. The first is Article 16, Section 3, of the Constitution which sets forth the reasonable-beneficial concept which applies to riparian uses as well as appropriation uses. Additionally, riparian rights may be lost by prescription. This must be distinguished from loss by mere nonuse. That is to say, a riparian right cannot be lost merely by not using it. But, if during the period of nonuse, an intervening appropriator comes forth, then the riparian right will be lost. Another factor which is important to California water law is the role of state water projects in providing water for all sectors of the state, particularly of Southern

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[9] In 1850, the year California was admitted to the Union, the legislature adopted the common law of England as a rule for judicial decisions. As adopted the common law included the English water rights doctrine of riparian ownership. See *Seneca Consolidated Gold Mines Co. v. Great Western Power Co.*, 209 Cal. 206, 287 P.93, 1930).

[10] See Dewsnup and Jensen, 1973, pp. 142-143).

[11] It is important to note that the California Civil Water Code, Sec. 106, sets domestic use as the highest use of water and the next highest use is irrigation. Domestic use has been held to include watering of stock used for domestic needs, not for commercial breeding. *Cowell v. Armstrong*, 210 Cal. 218, 290 P.1036, 1930.

California. The legislature has given the Department of Water Resources the right to appropriate water to project requirements and all state, and many private and local government project activities must conform with this water plan. This has obvious implications for riparian landowners who wish to begin a use.

Appropriative Rights--
The Supreme Court of California has defined an appropriation as "the intent to take, accompanied by some open, physical demonstration of the intent, and for some valuable use" (MacDonald v. Bear River Co., 13 Cal. 220). Whenever an application for appropriation is received, the State Water Resources Control Board must take into account not only the availability of unappropriated water, but also the aspect of water pollution and water quality (C.W.C. §761).

The measure of an appropriative right is determined by actual beneficial use not to exceed the quantity indicated on the permit received from the State Water Resources Control Board (C.W.C. §1240). As between appropriators, the first in time is the first in right (Al paugh Irrigation District v. Kern County, 113 Cal. App. 2d 286, 248 P.2d 117, 1952), and junior appropriators may use water only if such use does not deprive senior appropriators of their water rights. Between appropriators and riparians on the same watercourse, riparians have paramount rights except where riparian rights have been recognized on federal lands. No riparian rights have been recognized on federal lands because there is no private riparian land. It is only after the land passes to private ownership by patent that riparian rights may be acquired. The rule of Lux v. Haggin (loc. cit.) is that between a patentee of federal lands making a riparian claim, and an appropriator, the dates of appropriation and patent control. Riparian rights were superior only to those appropriative rights acquired after the date of patent.[12]

As to lands acquired by patent by the state, these same general rules apply. When California was granted land from the United States, it received riparian rights as an incident to that grant, which were in turn transferred to private patentees. When the civil code was adopted in 1872, however, the state consented to appropriations in derrogation of the state's riparian rights. Thereafter, any appropriation perfected prior to the patent from the state was superior to riparian claims by the patentee (Dewsnup and Jensen, 1973, p. 134). This structuring of the relative positions of riparian and appropriative rights is the clear meaning of the 1928 Constitutional Amendment (Cal. Const. Art. XIV, §3).[13] Although the riparian right is paramount, and includes a reasonable prospective use, an intervening appropriative use is allowed pending future riparian use (Dewsnup and Jensen, 1973, p. 143). Thus, a senior appropriator has the first right to use the extent of his permit where water is available beyond reasonable needs of riparians on the watercourse (Ibid.).

2.2.2 Appropriation Rights

After passage of the Water Commission Act of 1933, appropriative rights could be obtained solely by complying with the procedures contained therein (C.W.C. §1225).[14] Administration of this Act has been delegated to the State Resources Water Control Board (C.W.C. §175 et seq.). The initial step in obtaining appropriative rights under the statutory effort is the filing of an application with the State Board (C.W.C. §1250 et seq.).[15] The California Water Code requires the application to contain specific data such as the name of the applicant, the source of supply, the nature and the amount of the proposed use, the place of diversion, place of use, the effect on fish and wildlife resources, and time for completion of the diversion works (C.W.C. §1260-1266). Any person may apply for a permit to appropriate if he conforms to the code and regulations adopted thereunder (C.W.C. §1252).

There must be notice of the application sent by the Board to the applicant, the district attorney of the county wherein the diversion is proposed, the board of supervisors of the county, and to any other interested parties (C.W.C. §1300). This notice will contain information which is similar to that required in the application. Upon receipt of the notice, the applicant must publish it and post it in accordance with the statute if the application is for quantities in excess of statutory limits (C.W.C. §1310-1317 and 1320-1324).

An application may be protested by interested parties. Any protest made must be signed by the protestant, state objections to the application and contain information required by rules passed by the board (C.W.C. §1302, 1303, 1330 and 1331). If an application is protested, the Board notifies the applicant, protestant and interested parties and conducts a hearing on the application (C.W.C. §1340-1342, 1350-1355). The Board may also hold a hearing where no protest has been received which is held at the discretion of the Board (C.W.C. §1351).

For an application to be approved and a permit issued (C.W.C. §1375-1380, 141 et seq., 1675 et seq.),[16] the Board must find: (1) there is unappropriated water available (this water may include the water available from rights of lost or water from a return flow); (2) that the proposed use will not interfere with prior or paramount rights; (3) that the use would best serve the public interest. To these ends, the Board may approve or reject the application in its entirely or in part, and it may permit the appropriation under such terms and conditions as in its judgment will further the policy of the statute (C.W.C. §1201-1202; 1253, 1255 and 1350).[17] To provide due process, the decision of the Board is reviewable in Superior Court on a writ of mandamus sworn out by the applicant (C.W.C. §1360).[18]

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[12] One exception might be the case where the point of diversion for a pre-patent appropriation was on land not then part of the public domain. See Meyers and Tarlock, 1971, p. 152.

[13] See also Meridian Ltd. v. San Francisco, 13 Cal. 2d 424, 90 P.2d 537, 91 P.23 105, 1939.

[14] See also Crane v. Stevinson, 5 Cal. 2d 387, 54 P.23 1100, 1936).

[15] The regulations implementing these sections are to be found in California Administrative Code, Title 23, §650 et seq.

[16] Granting a water right is a two-step process. First, a permit is issued which is reviewed annually. After the conditions of the permit are met, a license is granted which may be reviewed at any time to insure that its conditions are being complied with.

[17] See also Pasadina v. Alhambra, 33 Cal. 2d 908, 207 P.23 17; and Rich v. McClure, 78 Cal. App. 2d 209, 248 P.278, 1926).

Upon approval of the application, the Board issues a permit which establishes a priority date and gives the consent of the state to appropriate water (Temescal Water Co. v. Dept. of Public Works, 44 Cal. 2d 90, 280 P.23 1, 1955). The permit does not grant an appropriative right which can only be obtained upon actual use in accordance with the terms and laws of the state. To secure his right and have a permit ripen into a license, the applicant must prosecute the construction of his diversion works with due diligence along with the utilization of the water for beneficial purpose (Sierra Land and Water Co. v. Cain Irr. Co., 25 P.2d 223, 1933).

Ground Water--

As common law, a landowner whose land was overlying percolating waters had the absolute ownership of those waters and could make full use of them without regard to other landowners. This was the rule in California until the doctrine of correlative use was adopted (Katz v. Walkinshaw, 141 Cal. 116, 70 P.663, 1903).

This doctrine gives all overlying landowners common or correlative rights to percolating waters beneath their lands (Vineland Irrigation District v. Azusa Irr. Co., 126 Cal. 486, 58 P.1057).[19] The doctrine provides that when there is a sufficient supply of water, each owner may withdraw the amount necessary for his needs. In a time of shortage, each owner is limited to the reasonable amount necessary to meet his beneficial needs, subject to the similar and equal rights of all the other overlying landowners (Pasadena v. Alhambra, loc. cit.). As a corollary to the rule that transfers of water may be accomplished only where there would be no injury to another, it should be clear that underground water may be exported from a basin only where there is enough water to meet the needs of all the overlying landowners (Katz v. Walkinshaw, loc. cit.).

The correlative right is a part of the land (Hillside Water Co. v. Los Angeles, 10 Cal. 2d 677, 76 P.2d 681, 1938), and does not depend on use (Hudson v. Dailey, 156 Cal. 617, 105 P.748, 1909). The difference between these rights and riparian rights is that the right of the overlying owner is an appurtenance with the land in all cases, and may be exercised by the current landowner except if it results in an overdraft of the aquifer (Pasadena v. Alhambra, loc. cit.).

The general proscription against waste in the use of water applies with equal force to the use of ground water (Ex parte Elam, 6 Cal. App. 233, 91 P.811, 1907). The legislature has provided for statutory regulation of the use of underground water (C.W.C. §300-311), but this does not mean that these waters are regulated by the permit system. Indeed, underground water is not subject to the permit procedure unless it is the underflow of a surface stream or is otherwise flowing in a subterranean stream with a definite and known channel (Regulations and Information..., 1973, p. 3). Percolating water is not subject to the jurisdiction of the State Water Resources Control Board (General Information..., 1974, p. 66).

Since the right of each landowner is equal and correlative, in times of shortage the available supply must be equitably apportioned (Ibid.). Surplus water not presently required for beneficial use on overlying lands and which may be withdrawn without creating an overdraft on the ground water supply may be appropriated for use on nonoverlying lands subject to future requirements on overlying lands (Ibid., pp. 66-67).

All withdrawals over the natural recharge rate of the aquifer will be harmful to the resource in the long run unless it is replenished from other sources.[20] In recognition of this, the courts will enjoin withdrawals to prevent harmful lowering of the water table (Burr v. Maclay Rancho Water Co., 154 Cal. 428, 98 P. 220, 1908). Since an overdraft is harmful to all users, if the overdraft goes unchallenged it will ripen into a prescriptive right against all users, with the result that all users will lose a share of their right in the proportion that the prescriptive user bears to their right (Pasadena v. Alahambra, loc. cit.). Allowing overdrafts is the only way to lose a right to percolating waters (Dewsnup and Jensen, 1973, p. 134).

Prescriptive Water Rights--

Riparian and appropriative rights at one time could be acquired by prescription (Peabody v. Vallejo, 2 Cal 2d 351, 40 P.2d 486, 1935; Pasadena v. Alhambra, loc. cit.). Pueblo rights and governmental rights were exempt from this doctrine. The water right was lost when the statutory period expired and the prescriptive title vested (Alta Land and Water Co. v. Hancock, 85 Cal. 219, 24 P. 645, 1890). When there had been actual, open and notorious use by the adverse claimant for five years, a prescriptive title was obtained (Peck v. Howard, 73 Cal. App. 2d 308, 167 P.2d 753, 1946). This adverse claim was subject to beneficial use requirements (Pabst v. Finmand, 19 Cal. 124, 21 P.11, 1922).

However, California law now provides that the exclusive method of acquiring an appropriative right is through adherence to the dictates of the statutes (C.W.C. §1225).

Preferences--

Between appropriators and riparians on the same source, riparians have paramount rights. Domestic uses have top priority, followed by irrigation uses (C.W.C. §1254).

2.2.3 Adjudicating Water Rights

There are two ways in which the adjudication of water rights relating to either surface or underground sources will culminate in a final decree. The first of these two is a proceeding provided by the California Water Code, which is commonly referred to as a statutory adjudication. All rights to a stream are generally included. This procedure is composed of two parts: an investigation and determination by the State Water Resources Control Board and court review of the Board's determination which confirms or modifies this determination. This procedure is not available for determining rights to ground water except subterranean streams flowing in known and definite channels and except the Scott River in Siskiyou County ("Determination of Rights...," 1973, p. 3).

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[18] See also California Code of Civil Procedure, §1094.5.

[19] Percolating waters are those which pass through the ground beneath the surface of the earth without any definite channel and do not form a part of the body or flow of any watercourse, whether it be surface or subterranean. Examples of these include rainwater or seepage which has travelled so far from the bed of a stream or other waters as to have lost its character as being a part of that water.

[20] See "Legal Breakthrough on Ground Water Management," 1975.

The second type of legal proceeding is an action filed in court by one or more water right claimants against one or more other claimants. Only the rights of those who are made parties to the action are adjudicated. Court decrees and actions which involve only some of the water users on a stream or in a ground water basin sometimes prove to be of very little value because those who are not made parties are not bound by the decision and may divert water without regard to the decree. In such cases, another action must be brought in order to secure an effective adjudication. This handicap is avoided if all those who claim a right to the use of water from a common source of supply are made parties so that each right can be defined and determined with respect to all the other rights as to priority, quantity of water, season of diversion, place of use, and purpose of use.

The State Water Resources Control Board may be appointed by the court as a referee in the second type of proceeding and, of course, is always involved in the first type.

The State Water Resources Control Board may, upon its own initiative, or in response to a protested water right application or water right dispute, conduct hearings, inquiries and other proceedings. It may take testimony, subpoena witnesses and petition the superior courts for orders compelling the attendance of witnesses and the production of evidence (C.W.C. §1075-1096). The Board is also authorized to supervise court-ordered distributions of water, and to institute actions in superior court to enjoin unauthorized appropriations (C.W.C. §1051-1052). As mentioned before, all actions before the Board must be open to the public, and are conducted in general accordance with the rules of evidence, although as is the case with many administrative hearings, these rules are less strictly applied than in a trial before court. Notices are sent to the parties involved and to interested persons prior to any hearing and testimony is invited from all parties concerned.

The California Water Code authorizes statutory adjudications for all kinds of rights to use water in any stream system (C.W.C. §2500-2900). This proceeding is initiated before the State Water Resources Control Board by the filing of a petition which requests a determination of rights to water or the use of water. This petition must be signed by one or more claimants to the water source involved. The State Board may determine all rights to water of any stream system upon petition by any water rights claimant when the Board believes that such a determination will be in the public interest (C.W.C. §2525).

BEFORE THE STATE WATER RESOURCES CONTROL BOARD
OF THE STATE OF CALIFORNIA

In the Matter of the Determination of the)
Rights of the Various Claimants to the)
Waters of ____________ and Its)
California)
Tributaries, in _________ County,)

PETITION FOR DETERMINATION OF WATER RIGHTS

To the State Water Resources Control Board:

The undersigned, your petitioners, respectfully represent:

FIRST--That they are claimants to water or use of water of the above-named stream system, to wit, said _______ and its tributaries, in ______ County, California.

SECOND--That there are various claimants to waters and the use of water of said stream system and to rights in and to the waters thereof.

THIRD--That the public interest and necessity will be served by a determination of the rights in and to the water of said stream system.

WHEREFORE, your petitioners request that a determination of the rights of the various claimants to the waters of said stream system be undertaken as provided for in Sections 2500 to 2900, inclusive, of the Water Code.

Petitioner	Post Office Address
____________________	____________________
____________________	____________________
____________________	____________________
____________________	____________________

Upon receipt of such petition, a notice is prepared by the Board setting forth the fact of entry of the order granting the petition and of the pendancy of said proceedings specifying the date on which the investigation of the system will commense, and the date prior to which all claimants must notify the Board in writing of their intention to file proofs of claim and stating that all claimants be required to make proofs of their claim at a time to be fixed by the Board at the conclusion of its investigation. A copy of this notice is published in one or more newspapers of general circulation, published in each county in which any part of the stream system is situated. It is not required that claimants present claims or proofs at this date.

The Board makes a preliminary investigation of the stream system and if the facts and conditions are such that the public interest and necessity will be served by such a determination, an order is entered granting the petition. Investigation of the stream system by the Board preceeds filing of proofs and hearings. This investigation is primarily a data gathering investigation. Upon notice by the Board, proof of claims must be filed containing detailed information concerning the nature, quantity and date of use and the means of diversion. The Board then issues an abstract of proofs so filed which, along with any other evidence before the Board, may be inspected by all claimants (C.W.C. §2550-2629). The investigation of the stream will include measurements of the water supply and all of the diversions from the stream system; a survey of all diversion conduits and areas irrigated or irrigable therefrom; a survey of the principle soil types of the area; and a study of water requirements of the various uses being made. This study includes a determination of the duty of water on the lands served from the stream system, and for the several crops thereon, the conveyance losses in the diversion conduits and stream channels and the water requirements for domestic or stockwatering purposes and any other uses involved. This investigation also includes an engineering report which sets forth the facts and the results of studies on water requirements, includes the maps of the stream systems showing the diversion systems, and the land irrigated therefrom.

Upon filing of the engineering report, the Board prepares a notice setting forth a date prior to which proofs of claim of water right must be filed by claimants of rights to the use of water from the stream system, including those whose rights were initiated under provisions of the Water Commission Act, or the Water Code. A copy of this notice together with blank forms for submitting proofs is sent by certified mail to each known claimant.

Upon expiration of the time allowed within which to file proofs, the Board must, if there are less than twenty-five proofs filed, prepare an abstract of all proofs. A copy of the abstract is sent by certified mail to each party who has filed a proof together with a notice of time and place. When the proofs and all the information has been collected and filed with the Board, it will then be open for public inspection. Within fifteen days of the expiration of this time, notices of contest of claims may be filed with the Board. This fifteen-day period may be extended if good cause is shown. A hearing before the Boardis held on each contestant claim, at which time both the claimant and contestant may appear and submit evidence to substantiate their respective contentions. The Board makes a decision based upon the evidence presented at such a hearing ("Regulations and Information," 1973, p. 8).

Upon completion of all contest hearings, the Board makes an order which determines and established all rights to the water of the stream or use of the water of the stream system. This determination is based upon the data and evidence presented by the parties or by other evidence which is otherwise available to the Board in the proceeding. This order is printed and a copy of it is mailed to all parties who have filed proofs of claim (C.W.C. §2700-2703).

A copy of this order of determination, together with the evidence and transcript of testimony taken, is filed with the Clerk of Superior Court of the county in which the stream system or some part thereof is located and an order is obtained from the Court setting a time for a hearing. A copy of the court order of the hearing is sent by certified mail to each interested party and a copy is also published in one or more newspapers published in each county in which any part of the stream system is situated.

Any party who is dissatisfied with the order of determination prepared by the Board may file with the Clerk of the Court at least ten days prior to the dates set for hearing those exceptions to such orders stating the reason therefore and the relief requested. At the hearing held by the Court, the order of determination of the Board and any exceptions are considered. The Court may allow such additional or amended pleadings to be filed as may be necessary to a final determination and may take additional evidence or may refer the matter back to the Board for further determination (C.W.C. §2756-2767). At the conclusion of the hearing, the final decree is entered by the court, which establishes all rights to water or the use of water on a stream system, etting forth a priority, if any, the amount, season of use, purpose of use, point of diversion, and place of use of each right along with the relation of each right to every other right on the stream system. Appeals from this decree may be taken in the same manner and with the same effect as in civil cases as this and not the decree of the Board is the final adjudication for purposes of civil appeal (C.W.C. §2750-2774).[21]

The above procedure may be by-passed upon authorization of the Board for persons whose use of water under claim of right does not exceed ten acre-feet of water annually, if the Board finds that the use of such claim of right would have no material effect on the rights of a claimant. However, persons so exempted may elect to continue to be subject to the proceedings.

When an action is filed in court for the determination of rights to the use of water, the court may, in its discretion, refer the suit to the State Water Resources Board. There are two types of references provided by the Water Code (C.W.C. §2000 and 2001).[22] Statutory authorization provides that the court may refer to the Board as referee to "any or all issues involved in a suit." The second type of authorization provides that the court may refer the suit to the Board for investigation and report of any or all of the physical factors involved. The second type of procedure is preferred in most instances because the Board and its staff of trained personnel can usually render more effective assistance to the court by investigation of the physical facts and a report thereon, than by duplicating the functions of the court by holding hearings and taking testimony. However, the latter method is allowed and is specifically provided for by statute (C.W.C. §2010). Court actions which involve a determination of all the relative rights to the use of water on the entire stream system or ground water basin afford a basis for distribution of water after decree under water master service. Furthermore, water users may secure the services of the Department of Water Resources in making distribution of water to them in accordance with their respective rights as determined by the court. Actions in which determination of only a portion of the water rights and a common source of supply are involved do not ordinarily afford opportunity for such a distribution of water. Generally, these are so incomplete in their results and of such limited benefit that the State Water Resources Control Board does not favor a reference thereof where a water master service is the ultimate objective sought ("Regulations and Information," 1973, p. 4).

2.2.4 Conditions of Use

Beneficial Use--

The policy set forth in California Water Code, Section 100, states that:

> The general welfare requires that the water resources of the state be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable method of use of water be prevented.... The right to water or to the use or flow of water in or from any natural stream or watercourse in this state is and shall be limited to water as shall be reasonably required for the beneficial use to be served.[23]

The paramount interest in the use of water is for public purposes and it has been declared that it is in the interest of the state to develop water resources for the greatest public interest (C.W.C. 104-105). The limitations and prohibitions of the reasonable use rule apply to every water right and every method of diversion (Peabody v. Vallejo, 40 Cal. P.2d 486, 1935).

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[21] See also Wood v. Pendola, 1 Cal. 21, 35 P.2d 526, 1934.

[22] C.W.C. §2000-2050 cover referrals from state courts, while §2075-2076 cover referrals from federal courts.

[23] This statutory language is consistent with the "reasonable-beneficial" concept embodied in the State Constitution, Art. XIV, §3. The excerpt of the statute gives the spirit of the law. See the text for the full citation.

The vesting of appropriative rights, as has been pointed out, depends upon beneficial use of water. These uses are specifically recognizes as beneficial in California, but for purposes of this report, which is to focus on the water right and the exercise of the same in light of water quality, it is noted that the appropriation of water for sale, rental, or distribution, with certain exceptions, is declared to be a public use and as such is a beneficial use (San Joaquin and Kings River Canal and Irr. Co. v. Beaudry, 67 Cal. 120, 7 P.264, 1885).[24] The exception to this rule is the sale, rental or distribution of water through a mutual water company since, although the use is beneficial, it is not a public use (In re Thomas' Estate, 147 Cal. 236, 81 P. 539, 1905).[25] The rationale for not extending this to mutual water companies is that the corporation is a mere agent of the water rights owners; and for that reason is not a true public utility (J.M. Howell v. Cornig Irr. Co., 177 Cal. 513, 171 P. 100, 1918).

The California Constitution provides that the right to use water is limited to that amount of water "as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable diversion of water (Calif. Const. Art XIV, 3).

> What may be a reasunable beneficial use where water is present in excess of all needs would not be a reasonable beneficial use in an area of great scarcity and need, and that what is beneficial use at one time may, because of changed conditions, become a waste of water at a later time (Trelease, 1957, pp. 1, 14, 16).

An appropriator who diverted and used water, and allowed it to go to waste and flow back into a ravine, acquired no rights to the water which had originally been diverted and used for irrigation by a prior appropriator (Brown v. Mullin, 3 P. 99, 65 Cal. 89, 1884).

An appropriator cannot be compelled to divert in the most scientific method, and is entitled to make a reasonable use of the water according to general custom, as long as the custom is not unnecessarily wasteful (Tulare Irr. Dist. v. Lindsay-Strathmore Irr. Dist., 45 P.2d 972). In Erickson v. Queen Val Ranch Co. (99 Cal. Rptr. 446, 22 C.A. 3d 578, 1971), the court held that transmission losses of 5/6 of the flow which were reasonable and consistent with local custom, was not in conformity with the demands of the State Constitution, Article XIV, Section 3, which establishes a state policy of achieving a maximum beneficial use of water and the prevention of waste, unreasonable use and methods of use.

What is a reasonable use is a question of fact to be determined in each particular case (Joslin v. Marin Municipal Water Dist., 67 C.2d 132, 429 P.2d 889, 1967). Further, the California Constitution, Article XIV, Section 3, which allows riparian owners or overlying landowners only reasonable beneficial use of water against appropriators, was adopted to redefine water rights (Ibid.). Therefore, riparian use must be beneficial and reasonable within the meaning of this constitutional provision.

In November 1975, the California Court of Appeals for the 1st Appellate Division decided a case of first impression that may have a very significant impact upon water use efficiencies in the state (E.D.F. v. East Bay Municipal Utility Dist., see Environmental Reporter, Decisions No. 16, Feb. 13, 1976). The court was faced with the task of determining whether the 1928 constitutional amendment was applicable to other than competing claims of property rights in water such as those who are "unpermitted" claimants to the use of the state's waters, i.e., sportsmen and others who are still able to find opportunities to enjoy outdoor recreation. After a close look at the historical development of the law, it concluded that the courts have been aware of the necessity for flexibility in construing the law to keep pace with the needs and transformations constantly taking place, and that there is no difficulty in holding that the amendment can only "reasonably be interpreted as an unqualified expression of fundamental policy by the people of California that the general welfare requires that all of the water resources of the state be put to beneficial use to the fullest extent of which they are capable." As to whether or not it is unreasonable for the users of water not to have adopted recycling and reuse of waters to prevent waste is a valid issue for the trial court to decide in each particular case.

One other important point was decided by the court, which directly affects the irrigation return flow and water use efficiency issue. The court decided that an irrigation district contracting with the Federal Government for their supply of water must follow federal law, not state law, i.e., that the state courts are without authority to interfere with contracts of this kind, and that the Federal Government agencies do not have a public trust to the state for the use of state waters legally appropriated.

Waste--
The waste of water can be considered the opposite of using the water beneficially. Waste water is that water which has been used by a prior user which has left his lands and goes upon the lands of another, or otherwise becomes available for use by another, without returning to a natural watercourse. A water right does not extend to the waste of the water (Calif. Const. Art XIV, §3).

Even though the means of diversion employed must not be unnecessarily wasteful, when ditches and flumes are the usual and ordinary means of diverting water, parties appropriating by such means cannot be compelled to substitute iron pipes (Barrows v. Fox, 9 Cal. 63, 32 P.811). However, they will be required to prevent unnecessary waste by keeping their ditches and flumes in good repair (Ibid.).

2.2.5 Manner in Which Rights May be Adversely Affected

Water not beneficially used ceases to be part of an appropriated right, and if there is nonuse for three years, the unused water reverts to the public. Riparian and Pueblo rights are not subject to forfeiture (Herminghaus v. So. Calif. Edison Co., 200

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[24] See also Cal. Const. Art. XIV, §1.

[25] However, California's Code of Civil Procedure, §1238(4) permits this as a public use for purposes of eminent domain.

Cal. 81, 252 P.607, 1926; and Los Angeles v. Glendale, 23 Cal. 2d 68, 142 P.2d 289, 1943).

The party claiming a water right based upon another's forfeiture has the burden of proving the forfeiture (Lema v. Ferrari, 27 Cal. App. 2d 65, 80 P.2d 157, 1938).

A water right is abandoned when possession is relinquished without a present intention to repossess. Coupled with this, there must be an intention and an action to abandon (Utt v. Frey, 106 Cal. 392, 39 P. 807, 1895).

Appropriative rights can be lost by abandonment but riparian rights cannot (Wood v. Etinwanda Water Co., 147 Cal. 228, 81 P.512, 1905). There is no time element when dealing with abandonment, it is a question of fact to be determined by a trier of fact (Utt v. Frey, loc. cit.). The party asserting the abandonment has the burden of proof (Ward v. Monrovia, 16 Cal. 2d 815, 108 P.2d 425, 1940).

Adverse Possession--
Case law provided that riparian and appropriative rights could be lost by the adverse possession of the right by another user. The use had to be open, notorious by the adverse user for five years (Peabody v. Vallejo, loc. cit.; and Pasadena v. Alhambro, loc. cit.). California statutes now provide that no right to appropriate water can be acquired unless an application has been filed with the State Board (C.W.C. §1225).

Condemnation--
Water rights may be lost when a governmental agency or preferred water user exercises the powers of eminent domain to condemn water rights. This condemnation can be used for present or future development for county and municipal water district systems (California Code Civil Process, §1238(5)).

Enforcement of Beneficial Use or Waste Concepts--
An appropriator is limited to the quantity of water specified in his permit that is being reasonably beneficially used and any unused water is subject to the forfeiture statute. No appropriation is valid unless it is pursuant to a beneficial use.

A water right certificate is subject to divestment for failing to apply the water to a beneficial use (Yellen v. Hickel, 335 F. Supp. 200, 1971).

California policy is to put waters of the state to beneficial use and to prevent the waste or unreasonable method of use of the water (C.W.C. §100). Since waste is the antithesis of beneficial use or a reasonable use, any practice which is wasteful will be prohibited. In Holmes v. Nay (199 Cal. P. 325, 1921), the court held that a lower riparian owner could complain of the muddying and polluting of water by upper riparian owners, except insofar as it was reasonably necessary and incident to the use of water by the upper riparians. Where the impairment of the water prevents its usefulness for the purposes to which it was devoted, it is an invasion of rights (Wright v. Best, 121 Cal. P.2d 702, 1942).

2.2.6 Legal Incentives and Disincentives For More Efficient Water Use Practices

Water Use Practices--
Irrigation Return Flow--Irrigation return flows occur from deep percolation from the overapplication of water to the land, seepage from conveyance systems, and tailwater runoff. A downstream senior appropriator is entitled to have the stream flow in a sufficient quantity to satisfy his appropriation.[26] Return flows are those waters which return to a stream after use, and which may become subject to vested rights of downstream users. Thus, an upstream junior appropriator cannot use water or alter his return flows if that use or practice would deprive the downstream senior of his appropriated quantity.

A riparian owner is entitled, even as against another riparian, to a substantially unpolluted stream as well as to undiminished flow of water (C.W.C. §100).

It has been judicially recognized that riparian lands in California benefit from the return to the stream water which had been diverted upstream but not consumed (Anaheim Union Water Co. v. Fuller, 150 Cal. 327, 88 P. 978, 1907). The riparian rights of such lands entitle the owner to the natural flow of the stream, including such portions of that flow which have been diverted upstream but are allowed to flow back into the stream after use (Southern California Inv. Co. v. Wilshire, 144 Cal. 68, 77 P.767, 1904). Thus, a riparian owner may enjoin an upstream diversion out of the watershed if the excess waters after their use cannot return to the stream above his lands (Huffner v. Sawday , 153 Cal. 86, 94 P.424, 1908). This concept is applicable to appropriative rights as well (Scott v. Fruit Growers' Supply Co., 202 Cal. 47, 258 P. 1095, 1927).

In 1939, the California Supreme Court upheld the right of an irrigation district to recapture its return flows from a creek, at a point which was within the boundaries of the district (Stevens v. Oakdale Irr. Dist., 13 Cal. 2d 343, 90 P.2d 58, 1939). Part of the language of the decision is of particular importance and reads as follows:

> To summarize, one who produces a flow of foreign water for beneficial use and thereafter permits it to drain down a natural stream channel, is ordinarily under no duty to lower claimants to continue importing the supply or to continue maintaining the volume of discharge into the second stream channel at any fixed rate. The rule may have exceptions, as perhaps where the artificial condition has become inherently permanent and there has been a dedication to the public use, or where the drainage is stopped wantonly to harm a lower party, without other object. But as a general proposition, an irrigation district, after importing water from one river, passing it through irrigation works, and discharging it into a natural creek bed in the second watershed, may change the flow of water imported or the volume of water discharged from its works into the second stream, or stop the flow entirely, so long as this is done above the point where the water leaves the works of the district or the boundaries of its land. An exception to the rule is not created by the fact that the district may act upon the water a second time while in its possession, by retaking it at a point of drainage for further beneficial application

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[26] For an article dealing with irrigation in California, see Leach, 1976, pp. 6-7.

Salvaged and Developed Waters--

In light of California's policy as to beneficial use and the prohibition on waste or unreasonable use, it would seem that if a water user improves his practices and thereby saves water, he should be entitled to use such waters.[27]

Developed waters are not present in the area until brought there by means of artificial devices, while salvaged waters are already in the area or close to it (Vernon Irr. Co. v. Los Angeles, 106 Cal. 237, 39 P. 762, 1895).

It is important to note that the right of the salvager and developer to take the water he salvages or develops must not infringe upon the prior rights of others (Pomona Land and Water Co. v. San Antonio Water Co., 152 Cal. 618, 93 P.881, 1908).

Provisions for Transfer of Water Rights and Diversions--

As a general rule, riparian rights are appurtenant to the land and are transferred by a conveyance of real property (Holmes v. Nay, 186 Cal. 231, 199 P. 325, 1921). A parcel of land, when conveyed, loses its riparian right when it is severed from land bordering the stream, unless the riparian right is expressly reserved in the conveyance of the separate parcel (Anaheim Union Water Co. v. Fuller, loc. cit.).

Though riparian rights may be conveyed separately from the land--that is, a water right severed from the land--the conveyance binds only the grantor and his successor and does not bind other riparians (Spring Valley Water Co. v. Alameda County, 88 Cal. App. 157, 263 P. 318, 1927; and Parker v. Swett, 188 Cal. 474, 205 P. 1065, 1922). Severance may be accomplished by grant but can also occur with a loss of contiguity with riparian land, prescriptive or condemnation. A riparian land owner may convey a portion of his riparian rights with part of his land or all of the riparian rights separately, or convey part of his riparian rights separately (Holmes v. Nay, loc. cit.; Forest Lakes Mutual Water Co. v. Santa Cruz Land Title Co., 98 Cal. App. 489, 277 P. 172, 1929; and Doyle v. San Diego Land and Town Co., 46 F. 709, 1891).

Riparian rights never attach without a specific transfer to land which was not part of a riparian land and within the watershed (Miller and Lux v. James, 180 Cal. 38, 179 P. 174, 1919); Boehmer v. Big Rock Irr. District, 117 Cal. 19, 48 P. 908, 1897). Another way of saying the same thing would be that if a riparian tract were granted in separate parcels with no mention being made of a transfer of water rights, only the remaining riparian tract held under one title in the chain of title leading to the present owner would have riparian rights.

In spite of the case decisions indicating that riparian rights may be transferred to other lands--even though the transfer binds only the grantor and his successor --the State Water Resources Control Board maintains that the riparian right cannot be transferred for use upon another parcel of land ("Regulations and Information, 1973, p. 63). This position is in opposition to the case holding that the right is transferable, but is in line with the concept that riparian rights follow the riparian land through the chain. However, it could easily be in conflict with the state policy that the maximum reasonable-beneficial use be made of the waters of the state (C.W.C. §105).[28] Since a riparian landowner may make reasonable-beneficial use of his riparian water, the concern over title transfers may not be as limiting as it first appears.

As between riparian owners, priority of right or priority of uses establishes no priority of right; that is, one cannot claim a superior right merely because he used the water first (Pabst v. Finmand, loc. cit.; Prather v. Hoberg, 24 Cal. 2d 549, 150 P. 2d 405, 1944). If there is insufficient water for the reasonable-beneficial requirements of all riparian owners, they must share the available supply. Apportionment is governed by various factors, including each owner's reasonable requirements and uses. Among the factors to be considered in apportioning water between riparians, the following are included: the number of riparians, the aridity of the area, rainfall, the length of the stream, the volume of water, the extent of each ownership, character of the soil, relative possible uses of each tract, profitability of use, land owned by each claimant and the area irrigated by each claimant (Southern California Investment Co. v. Wilshire, 144 Cal. 68, 77 P. 767, 1904). The riparian owner is subject to the doctrine of reasonable use, which limits all rights to the use of water to that quantity reasonably required for beneficial use and prohibits waste or unreasonable use, or unreasonable methods of use or diversion (Cal. Const. Art. XIV, §3). Those limitations provide that in no case do riparian rights attach to water that is being wasted (Meridian Ltd. v. San Francisco, 13 Cal 2d 424, 90 P. 2d 531, 91 P. 2d 105, 1939; and Rancho Santa Margarita v. Vail, loc. cit.). The doctrine of reasonable use which limits the right of the use of water and prevents the abuse of riparian rights in relation to the rights of other riparians leads to some implications for water quality. Between riparian owners, one of them may take the whole supply if necessary, for strictly domestic use; that is, so-called "natural uses" arising out of the necessities of life on riparian lands such as household or drinking water both for human consumption and for domestic animals (Deetz v. Carter, 232 Cal. App. 2d 851). The concept of natural use is important in determining the priorities among riparian rights. The primary right of every riparian along the watercourse is to use the water for the so-called natural uses which have been interpreted to mean domestic uses (Cowell v. Armstrong, 210 Cal. 218, 290 P. 1036, 1930). The use of water for domestic use is unlimited, even if a lower riparian owner receives no water (Duckworth v. Watsonville Water and Light Co., 150 Cal. 520, 89 P. 338, 1907).

Unlimited use for domestic use is subject to the limitation that it must be for noncommercial use (Cowell v. Armstrong, loc. cit.; Prather v. Hoberg, loc. cit.). The next priority in the use of water subject to riparian rights is irrigation (C.W.C. §106).[29] It is noted, however, that the use for irrigation is limited to a reasonable share and a reasonable use as opposed to domestic use, which may be unlimited under certain circumstances (Miller and Lux v. Enterprise Canal Co., 169 Cal. 415, 147 P. 567, 1915).[30]

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[27] See Towner, 1967.

[28] See also C.W.C. 101, which indicates that a riparian landowner may make reasonable-beneficial use of his riparian right whether transferred or not.

[29] See also Smith v. Corbitt, 116 Cal. 587, 48 P.725, 1897.

Although an upper riparian does get first chance to use the water, he may not damage the lower riparian by such use (Pabst v. Finmand, loc. cit). While the concept of not damaging the lower user is most often seen in light of the amount of water delivered to a lower riparian, he may also enjoin an upper riparian in a nuisance action for polluting the water, where the pollution impairs its value for the ordinary purposes of life (Joerger v. Pacific Gas and Electric Co., 207 Cal. 8, 276 P.1017, 1929). This would seem to be a natural result of the reasonable-beneficial use concept.

As has been pointed out, the general rule in California for appropriative rights is that changes of place of use, point of diversion, the nature of use, and diversion works are permissable to the extent that the changes do not injure the rights of others (Kidd v. Laird, 15 Cal. 161, 1860). If there is a change in the point or means of diversion for statutory appropriations, the change must be approved by the State Water Resources Control Board (C.W.C. §1700, 1702-05). For nonstatutory appropriations, the requirement is only that others are not injured (C.W.C. §1706). What constitutes injury is a question of fact in each case, but one court has held that prevention of seepage, which had been beneficially used by other appropriators and which was stopped by an alteration of diversion works, was sufficient change to constitute an injury (Dannenbrink v. Burger, 23 Cal. App. 589, 138 P. 751, 1913). Rights may also be obtained by lease, license and contract. Transfers of water separate from the land have been uncommon in California.

Water rights acquired by appropriation may be transferred as appurtenant to land in the conveyance of real property or separate therefrom (Mount Carmel Fruit Co. v. Webster, 140 Cal. 183, 73 P.826, 1903). California does not have a statute declaring all water rights to be appurtenant to the land (Myers and Posner, 1971, p. 25). As with riparian water rights, appurtenant appropriative water rights are presumed to be transferred when the land is conveyed, and if only upon express reservation in a later conveyance of the land, or by express language in the conveyance of the separate water right, that the right is covered (Hutchins, 1956, pp. 124-27).

In City of Los Angeles v. City of San Fernando (123 Cal. Rptr. 1, 537 P.2d 1250, 1975), the court held that changing the use of recaptured return waters which were returned to ground water was as acceptable as changing the place or use of appropriate waters.

Transfers by Irrigation Districts--
The sale of any water right by an irrigation district is prohibited by the Water Code (C.W.C. §22261). While other sections authorize the sale of district "property," under prescribed conditions, the more specific prohibition on the sale of water rights is apparently controlling. Water rights are not "property" for purposes of the irrigation district act (Meyers and Posner, 1971, p. 25). However, districts are permitted to contract to sell any surplus waters for use either within or without the district, provided that the contract is for a period not to exceed three years (C.W.C. §22259-60). Rights may be obtained by lease, license and contract. Water rights may be leased as a part of the lease of real property or they may be leased separately. The same restrictions, however, apply as in the discussion above. Water rights may be obtained by license in the same manner as licenses may create rights in other real property. Finally, water rights may be obtained by contractual agreement with courts applying general real property contract law (Fawkes v. Reynolds, 190 Cal. 204, 211 P.449, 1922), although it has been held that a riparian was not permitted to contract away his riparian rights on riparian land, as against other riparians (Duckworth v. Watsonville Water and Light Co., loc. cit.).

2.2.7 Waste Water Disposal and Drainage

California history of drainage law is a fascinating experience of judicial misstatement of the law and apprehension to correct the error. From 1873 to 1966, California applied the civil law or natural flow rule. Believing that it was pronouncing the common law that prevailed at the time (see Hutchins, 1974, Vol. II, p. 542), the Supreme Court of California declared in 1873 that the owner of an upper field has a natural easement across an adjacent lower field to discharge diffused surface waters in a natural depression across the latter's land (Ogburn v. Connor, 46 Cal. 346). Several attempts were made to redefine the rule properly during the next 93 years, but the courts consistently held the civil law rule had become a rule of property.

In 1966, the Supreme Court reexamined the rule of drainage due to an apparent variation in application between rural and urban areas. Discerning the difference in application and changing conditions from the date when the rule was pronounced to the modernizing urban trend of the 1960's, the court did a beautiful job of diplomatically having its cake and eating it too. It said (Keys v. Romley, 64 Cal. 2d 396, 412 P.2d 529 at p. 536-537):

> We find the law in California, both as to urban and rural areas, to be the traditional civil law rule.... But no rule can be applied...with utter disregard for the peculiar facts and circumstances.... No party, whether upper or lower riparian, may act arbitrarily and unreasonably in his relations with other landowners and still be immunized for all liability.
>
> It is, therefore, incumbent upon every person to take reasonable care in using his property to avoid injury to adjacent property through the flow of surface waters....
>
> ...If the facts should indicate both parties conducted themselves reasonably, then courts are bound by our well-settled civil law rule.

2.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

2.3.1 State Water Agencies

California presently has three principal agencies with duties in the water rights area. These are the Department of Water Resources, the California Water Commission, and the State Water Resources Control Board. Basically, the Water Commission is an advisory board which serves as a watch dog, so to speak, over the Department of Water Resources' activities, and confers with and counsels the Director of the Department. The Department of Water Resources' function is primarily to oversee the operation of the state water projects and programs.

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[30] Note irrigation has been held to include a flooding of grasslands, U.S. v. Gerlack Livestock Co., 339 U.S. 725, 1950.

In addition to these powers, the Department of Water Resources also has major responsibilities in administering state and federal grant programs (C.W.C. §133 and 12881 et seq.), and in the appropriation of water for state projects and programs (C.W.C. §10500 et seq.), and it is the representative of the state on any commission to form compacts to control water use within the state (C.W.C. §128). The Department is also charged with planning and developing water-related recreational resources (C.W.C. §123).

State Water Resources Control Board--
The statutory mandate of this Board is to "exercise the adjudicatory and regulatory functions of the state in the field of water resources" (C.W.C. §174). The Board's major responsibilities include administration of water appropriations statutes and maintenance of water rights records (C.W.C. §4999-5008). Although the Board is limited to a statutory procedure adopted by the legislature, when considering water rights applications (C.W.C. §1225) it has discretion to adopt rules in the conduct of its business in conformity with the provisions of the California government code.[31]

The Board was given broad powers in the area of water quality control by the Porter-Cologne Water Quality Act (California statutes 1969, c. 482; C.W.C. §13020 et seq.). The Board is authorized to hold hearings and conduct investigations which are necessary to carry out the powers vested in it. All such hearings are required to be open to the public (C.W.C. §183). The charge of the Board in the water quality area is to investigate, advise, adjudicate, and regulate. In theory, these functions are carried out through nine regional boards (C.W.C. §13200 et seq.), which are to formulate and adopt regional water quality plans in conformity to the policies of the state. In actuality, the regions set higher control standards than does the state. The Regional Boards have a very difficult time implementing these standards because they have no control over the granting of the water right in the first place. The result is that a water right is granted by the State Water Resources Control Board and then it is left to the Regional Boards to enforce the pollution standards, when they have had no control in granting the right in the first place. They are always trying to catch up by doing post-facto planning.

To this point, the water structure in California has been discussed in very general terms. What will follow is a detailed description and analysis of any constraints or facilitators in the substantive law regarding improving the quality of the water delivered to the user. The analysis will be broken down into three major areas. These will be: (1) the water delivery system, or the obtaining of the water right; (2) the farm or unit of application or use of that water right; and (3) an analysis of the removal system and any rights which can be obtained during the water removal process.

The responsibility for administering California water rights falls primarily upon the State Water Resources Control Board. All Board activities are governed by general state water policy.

Management and Administration of Ground Water--
Due to water supplies in the underground basins in the arid southern part of California being rapidly depleted by excessive pumping and in recognition of the fact that allowing the practice to continue was certain to destroy the usefulness of these basins, the state increased its participation in the management of these basins. Traditional local management was joined by state participation through action by the Department of Water Resources and the State Water Resources Control Board.

The impetus for basin management was first provided in *Pasadena v. Alhambra* (loc. cit.), which enunciated the doctrine of mutual prescription, thus moving away from the traditional individual vested rights analysis. In reaction to the need for management from a basinwide approach, the legislature recognized cessation or reduction of extraction of water to permit replenishment as a beneficial use, and protected the withdrawal rights of those who ceased extraction and used imported water on a temporary basis (C.W.C. §1005.2). To prevent salt water intrusions into basins which have been overdrafted, the legislature gave the State Water Resources Control Board the power to enjoin harmful pumping when a case is referred to it from the courts (C.W.C. §2020.1). The State Water Resources Control Board may also initiate actions to restrict pumping and impose physical solutions to prevent irreparable injury (C.W.C. §2100-2102).

The Water Replenishment District Act (Dewsnup and Jensen, 1973, p. 152) authorizes the formation of special districts empowered to levy ad valorem taxes, pump taxes, and direct charges to exchange and import water, to replenish underground sources, and to initiate adjudication proceedings. Only one such district has been formed, but other water-oriented special districts have been formed.

2.3.2 Judicial Bodies

California does not have special water courts. As previously stated, state courts are involved in the adjudication of water rights.

2.3.3 Water Users and Their Organizational Structure

Districts--
The number and variety of public districts with water resource interest in California is extensive.[32] There are county and state water districts, irrigation districts, many types of special districts, regional districts, and community service districts--all with powers affecting water use or quality. Added to this list are private and mutual water companies (Cal. L.R. 665, 1957). Private and mutual water associations are also recognized in California (Dewsnup and Jensen, 1973).

Generally, an individual acquires rights to use water by purchasing shares of stock in the association or by entering into a contract or by obtaining a conveyance (Dewsnup and Jensen, 1973). The costs of operation and maintenance are generally assessed on the stock. Shares in either type of association are transferable for water use within the service area, unless restrictions appear in the articles of incorporation or on the stock certificate. Both a private and mutual water association may become subject to the jurisdiction of the public utilities commission if they sell or deliver water for general public use (Palermo Land and Water Co. v. Railroad Commission, 173 Cal. 380 160 P.228, 1916).

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[31] California Government Code, §11371 et seq., is the section to which the Board is referred by California Water Code, 185. Californi

[32] For an excellent discussion of the various water districts, see *General Comparison of California Water District Acts*, Dept. of Water Resources, Bulletin No. 155, March 1965.

Irrigation districts ("Regulations and Information, 1973, p. 63) were authorized by the Wright-Bridgford Act of 1887 (C.W.C. §20500 et seq.). Formation parallels that of other districts within the state with the requirement for approval of the county board of supervisors, the Department of Water Resources, and, finally, the voters or property owners within the district.

An irrigation district is empowered to perform any act necessary to furnish sufficient water in the district for any beneficial use (Rogers and Nichols, 1967, p. 68). It may control, distribute, store, spread, treat, purify, recapture, and salvage any water, including sewage waters to the beneficial use or uses of the district, or its inhabitants, or the owners of rights to water in the district (C.W.C. §22078). It may provide for any drainage made necessary by the irrigation provided by the district (C.W.C. §22095), and in fact, it has a duty to do so (Sutro Heights Land Co. v. Merced Irrigation District, 211 Cal. 670, 296 P.1088, 1931).

Subject to the statute of limitations, irrigation districts have the power to contract for the exchange or delivery of water works necessary for delivery (C.W.C. §22228), to acquire the right to transfer and store waters (C.W.C. §22226-22228), and to acquire the right to store water or transport it to facilities owned by others (C.W.C. §22227). It may also enter into a contract to apportion water (Greeson v. Imperial Irr. District, 55 F.2d 321, 1931, DC Cal.), and lease or sell any of its surplus water for use within or without the district (C.W.C. §22259). The protection and conservation of underground water supplies for future as well as present use are primary functions of a water district (Cal. Civil Code §3000 et seq.).

An irrigation district must apportion water to each landowner on the basis of the ratio of his last land assessment bears to all land assessed by the district (C.W.C. §22250). The right of a landowner to water is limited to actual beneficial use (Nelson v. Anderson-Cottonwood Irr. District, 51 Cal. App. 92, 196 P. 292, 1921). In any event, a landowner has no right to use district water on lands outside the district (Jenison v. Redfield, 149 Cal. 500, 87 P. 62, 1906). The district may contract to supply water to a mutual company (C.W.C. §22253-22254). California statutes regarding irrigation districts provide that:

> A majority in number of the holders of title to land susceptible of irrigation from a common source and by the same system of works, including pumping from subsurface or other water, who are also the holders of title to a majority in value of the land may propose the formation of the district under the provisions of this division; or the formation of the district may be proposed by not less than 500 petitioners, each of whom is an elector residing in the proposed district or the holder of title to land therein and which petitioners include the holders of title to not less than 20 per cent in value of the land included within the proposed district (C.W.C. §22700).

Further, a district is authorized to:

> ...do any act necessary to furnish sufficient water in the district for any beneficial use (C.W.C. §22075).

The purposes of a district are set forth in Section 22078, which states:

> A district may control, distribute, store, spread, sink, treat, purify, recapture, and salvage any water including but not limited to sewage waters for the beneficial use or uses of the district or its inhabitants or the owners of rights to waters therein. A district may provide for any and all drainage made necessary by the irrigation provided for by the district (C.W.C. §22095).

The duty to apportion is set forth in Section 22250, which provides that:

> All water distributed by distrists for irrigation purposes shall except when otherwise provided in this article be apportioned ratably to each landowner upon the basis of the ratio which the last assessment against his land for district purposes bears to the whole sum assessed in the district for district purposes.

An Improvement District may be formed from lands which are not contiguous for one or the following:

> (a) Irrigation or domestic water service by a system of pumps or conduits or both.
> (b) Drainage or flood control.
> (c) Acquisition of existing works incidental to a water distribution system separate from or supplemental to the works of the district.
> (e) Maintenance of irrigation works of the district and works for water supply or drainage or both in or for the improvement district.
> (f) Control of weeds in or along conduits (C.W.C. §23600).

County drainage districts are set up to control storm and other waste waters, protect property from damage and to conserve such waters for beneficial purposes (C.W.C. §56040).

2.4 POLLUTION CONTROL

Appropriative water rights include a right to a certain flow of water and to a reasonable state of purity necessary for the beneficial uses intended (Rickey Land and Cattle Co. v. Miller and Lux, 152 F. 11, 1907 CA 9 Cal.). However, some deterioration within reasonable limits has been held not to be actionable (Dripps v. Allison's Mines Co., 45 Cal. App. 95, 187 P. 448, 1919).

California adopted comprehensive water quality control laws when the Porter Cologne Water Quality Control Act was enacted in 1969 (C.W.C. §13020 et seq.). It is administered by the State Water Resources Control Board, the Water Quality Advisory Committee, and nine California regional quality control boards. The nine regional boards are within the state resources agency. The Advisory Committee consists of the chairman, the regional board, and nine persons, each of a specified discipline appointed by the Governor (C.W.C. §13120, repealed by Stats. 1972, Ch. 813, §1). The committee advises the State Board which is the principle policy-making and pollution control agency working in coordination with the regional boards on pollution control.

The purpose of combining the functions of the former State Water Rights Board and the State Water Quality Control Board into one agency--the State Water Resources Control Board--was to provide for consideration of water pollution and water quality along with the availability of unappropriated water whenever an application for an appropriation of water is granted (C.W.C. §174). This purpose was implemented by various amendments to the water code, which declared legislative intent to protect water quality for beneficial uses as a major consideration of the Board when it authorizes new appropriations of water (C.W.C. §1242.5, 1243.5, 1258).

The State Water Resources Control Board is responsible for formulating the state's policy in accordance with the California water plan, legislatively declared guidelines, and approved regional plans. All state agencies and officers are to abide by the policy and are encouraged to participate in this formation (C.W.C. §13140-13146). In addition to formulating and adopting state policy, the Board serves as a state water pollution control agency for all purposes required by the federal water pollution laws (33 USCA 4669-1 et seq. and 1151 et seq.). It conducts research, coordinates investigations of other agencies, operates statewide data storage, and retrieval systems, conducts a public information program, allocates funds to regional boards, and regulates and enforces oil clean-up activity (C.W.C. §13161-13169). A further major responsibility is a review of actions taken by the regional boards. Such review is the final administrative action taken by the state, but is subject to judicial review by writ of mandate issued by the state courts (C.W.C. §13320-13330). Quality control at the regional level plays a crucial role in the state's quality control system. The regional Boards formulate and adopt regional plans which establish water quality objectives to protect beneficial uses and prevent pollution. The regional Boards then administer and enforce these regional plans (C.W.C. §13200 et seq.).

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APPENDIX A REPORT 3

COLORADO

3.1 HISTORICAL BACKGROUND

Colorado lies within the region of the United States typically classified as semi-arid. The state receives an average annual precipitation of 17 inches on its 104,247 square miles with a wide variation of more than 50 inches in the high mountains to 12 to 16 inches on the eastern plains and 7 inches in the San Luis Valley.

In 1970, water withdrawn from ground and surface sources for irrigation of 4.6 million acres amounted to 13,000 m.g.d. (Geraghty, 1973).

Throughout Colorado's history, water regulation has been synonomously thought of with water use. In 1861, the territorial legislature acknowledged riparian rights of water users for agricultural purposes:

> All persons who claim, own or hold a possessory right or title to any land or parcel of land within the boundary of Colorado Territory . . . when those claims are on the bank, margin or neighborhood of any stream of water, creek or river, shall be entitled to the use of the water of said stream, creek or river, for the purposes of irrigation, and making said claims available, to the full extent of the soil, for agricultural purposes (Session Laws of 1861, Act of Nov. 5, 1861, P.1, 1861, Colorado Laws 67, Amended 1866).

Subsequent laws and statutes ruled out the possibility of riparian rights and recognized only appropriation rights in Colorado.[1]

In 1864, the Territorial Legislature enacted a law that prohibited the waters of any stream from being diverted from its original channel to the detriment of any miner, millman, or others along the line of the stream who had a priority of right and required that sufficient water be left in the stream for the use of miners and agriculturists along the stream (Session laws of 1864, P. 32, p. 68).

In 1876, the Colorado Constitution was adopted and therein it is stated that:

> The water of every natural stream, not heretofore appropriated, within the state of Colorado, is hereby declared to be the property of the public, and the same is dedicated to the use of the people of the state, subject to appropriation as hereinafter provided (Colorado Constitution, Article XVI, Sec. 5).

The concept of prior appropriation, as expressed in the constitution, has been carried throughout the entire body of law and legislation since the time of its enactment. In 1889, an act was passed by the General Assembly stating:

> That all ditches now constructed or hereafter to be constructed for the purpose of utilizing the waste, seepage or spring waters of the state, shall be governed by the same laws relating to priority of right as those ditches constructed for the purpose of utilizing the water of running streams (Session Laws of Colorado, 1889, (S.B. 14) 7th Session of the General Assembly, p. 215).

In 1872, the first court decision in Colorado dealing with the appropriation doctrine was handed down. This case gave preference to the appropriation doctrine and also established the procedure of obtaining an easement to convey water across another's land in order that the water might be applied to a beneficial use (*Yunker v. Nichols*, 1 Colo. 551, 1872).

The case in Colorado confirming the appropriation doctrine was *Coffin v. Left Hand Ditch Co.* (6 Colo. 443, 1882). Herein, the court held that the appropriation doctrine had been the accepted practice since the earliest days of the territory. Based on the Session Laws of 1864 and previous cases, the Colorado Supreme Court held in the Coffin case that:

> . . . the common law doctrine giving the riparian owner a right to the flow of water in its natural channel upon and over his lands even though he makes no beneficial use thereof, is inapplicable to Colorado . . . . And we hold that, in the absence of express statutes to the contrary, the first appropriator of water from a natural stream for a beneficial purpose has with the qualifications contained in the constitution, a prior right thereto to the extent of such appropriation.

In the early development of the prior appropriation doctrine, it is important to note that a water right was created by a diversion of water (no longer required for the state in certain instances) and its application to beneficial use. The decree of that right issued by the judge placed the right in the priority system. Failure to get the right decreed rendered it junior to those who had adjudicated their right (*Hardesty Reservoir, Canal and Land Co. v. Arkansas Valley Sugar Beet and Irrigated Land Co.*, 85 Colo. 555, 277 P. 763, 1929).[2] However, water rights perfected before the recording system was adopted were not affected (*Larimer and Weld Reservoir Co. v. Fort Collins Milling and Elevator Co.*, 60 Colo. 241, 152 P.1160, 1915).

This system of rights adjudication by judicial decree was modified by the passage of the Water Right Determination and Administrative Act of 1969 (Colo. Rev. Stats., §37-92-101 et seq., as amended). This Act created special water rights and made some administrative changes in the water rights system. Decisions may be appealed to the judicial system, so Colorado still maintains a judicially oriented water law.

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[1] See Radosevich. G. et al. *Evolution & Administration of Colorado Water Law: 1876-1976*, Water Resources Publications, Ft. Collins, Colo., 1976, and "Survey of Colorado Water Law," 47 Denver Law Journal 266. 1970.

[2] See Colo. Rev. Stats. §148-21-22 (Supp. 1971) for a codification of the principle.

Little legislative or court action is found concerning ground water in the early history of Colorado due to the lack of extensive use of ground water supplies until recently. The first legislative step toward controlling ground water occurred in 1953, following the Supreme Court's finding in Safranek v. Limon (123 Colo. 330, 228 P.2d 975, 1951),[3] that Colorado water law was deficient with respect to ground waters. The law authorized ground water studies and required filing well logs.

The first "ground water law" was passed in 1957 and was applicable to all subsurface waters. The four major provisions of the law were: (1) by July, 1960, all ground water users must file statements with the State Engineer, setting forth such information as the nature, extent, location, and quantity of their withdrawals and use; (2) a ground water commission was created; (3) the commission had the power to designate "tentatively critical ground water districts in areas where the withdrawal of ground water appears to have approached, reached, or exceeded the normal rate of replenishment;" and (4) no new wells could be drilled or the supply from existing wells increased without first obtaining a permit from the State Engineer. This law set the basic institutional framework for ground water allocation and management in Colorado. However, due to the particular limitation for maintaining an area as "critical" under the 1957 Act, it was repealed and reenacted in 1965 (Moses, 1966).

The present statutory status of ground water laws in Colorado is the result of two major legislative enactments and subsequent amendments to the basic acts. In 1965, the "Ground Water Management Act" was adopted (Colo. Rev. Stat. Ann., §§148-18-1 to 38, 1965 Supp., now cited as Colo. Rev. Stats., §§37-90-101 to 141). It primarily addressed the non-tributary waters. The lack of specific legislation or judicial guidance for tributary waters and the emerging problems in the Arkansas, South Platte, and Rio Grande Valleys led to the enactment of the Water Right Determination and Administration Act of 1969 (Colo Rev. Stats. §§37-92-101 to 602). Aside from sweeping changes in the process of water administration and the introduction of a tabulation system, the 1969 Act attempted to fill the gap in legislation by addressing the tributary ground water issue.

These two acts are thus consistent with an early Colorado decision recognizing two categories of groundwater: (1) tributary ground water; and (2) non-tributary ground water (Medano Ditch Co. v. Adams, 29 Colo. 317, 68 P. 431, 1902). The court held the former refers to waters that, if left to flow, will become part of a natural stream, and the latter refers to waters which will not become part of any natural stream.

3.2 SUBSTANTIVE LAW

The appropriation doctrine is entrenched in Colorado. It is founded on a basis of statutory and case law. In general, the Colorado Doctrine of Prior Appropriation has four major elements: (1) water in its natural course is the property of the public and is not subject to private ownership; (2) a vested right to use the water may be acquired by appropriation for a beneficial use (see Colorado Constitution, Article XVI, Sec. 6); (3) the first person in time to use the water is first in right; and (4) beneficial use is the basis, the measure, and the limit of the right (Hamburg, 1968).[4]

3.2.1 Property Right in Water

The Colorado Constitution states in part that:

> The water of every natural stream, not heretofore appropriated, within the state of Colorado, is hereby declared to be the property of the public, and the same is dedicated to the use of the people of the state, subject to appropriation as hereinafter provided (Colorado Constitution, Article XVI, Section 5).

In Stockman v. Leddy (55 Colo. 24, 129 P. 220, 1912) the Colorado Supreme Court stated that:

> The state has never relinquished its right of ownership and claim to the waters of our natural streams, though it has granted to its citizens, upon prescribed conditions, the right to the use of such waters for beneficial purposes and within its own boundaries.

The "Water Right Determination and Administration Act of 1969" further states that:

> It is hereby declared to be the policy of the state of Colorado that all waters originating in or flowing into this state, whether found on the surface or underground, have always been and are hereby declared to be the property of the public, dedicated to the use of the people of the state, subject to appropriation and use in accordance with law. As incident thereto, it shall be the policy of this state to integrate the appropriation, use the administration of underground water tributary to a stream with the use of surface water, in such a way to maximize the beneficial use of all of the waters of this state (C.R.S. §37-92-102).

The words "waters of this state" refer to all surface and underground water in or tributary to all natural streams within the state of Colorado. Thus, all surface and subsurface waters are subject to appropriation. This condition is further specified by the statement of law that: "All designated ground waters in this state are therefore declared to be subject to appropriation in the manner defined in this article" (C.R.S. §37-90-102).

A number of cases have upheld the legislative provisions that ground water physically tributary to a stream system, whether they be seepage or waste waters, are subject to appropriation to the same extent as is surface water (Genoa v. Westfall, 141 Colo. 533, 349 P.2d 370, 1960; Black v. Taylor, 128 Colo. 449, 264 P.2d 502. 1953; Nevius v. Smith, 86 Colo. 178. 279 P. 44, 1928; McClellan v. Hurdle, 3 Colo. App. 430, 33 P. 280, 1893). With respect to natural springs, the statute provides that "the waters of natural flowing springs may be appropriated for all beneficial uses and the priorities of such appropriation may be determined as provided by law (Colo. Rev. Stats., §37-82-103). The person upon whose lands spring waters first arise has a priority in their use as long as such waters are usable upon his land (Colo. Rev. Stats., §37-82-102).

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[3] See also David L. Harrison and Gustave Sandstrom, Jr. "The Groundwater-Surface Water Conflict and Recent Colo. Legislation," U. of Colo. Law Review 43, 1971.

[4] See Colorado River Water Conservation District v. Rocky Mountain Power Co., 158 Colo. 331, 406 P.2d 798, 1965, and Four Corners Water Users Association v. Colorado River Water Conservation District, 159 Colo. 499, 414 P2d 469, 1966.

The courts have held, with respect to developed waters that the parties who increased the flow of a stream could appropriate water on the basis of the increase in average and continuous flow. These parties have not been allowed nor entitled to the original flow as against the rights of prior appropriation (Platte Valley Irrigation Co. v. Buckers Irrigation, Mining, and Improvement Co., 25 Colo. 77, 53 P. 334, 1898).

The importance of this distinction between developed water and salvaged water was illustrated late in 1974 in the case of Southern Colorado Water Conservancy District v. Shelton Farms (529 P. 2d 1321, 1974). In this case, the controversy arose over an attempt to have water salvaged as a result of cutting phreatophytes (water-loving plants) along the river given earliest priority on the stream. The reasoning was that the water was being consumed and so lost to other appropriators by a source predating all priorities. In denying the claims, the Colorado Supreme Court ignored the point concerning "seniority" of trees and dealt with the issue by sharply delineating "developed water" from "salvaged water."

The Court made it clear that developed water would be given a priority free from call on the stream since the water would not have been a part of the river system but for the activities of the developer. Therefore, it never would have been available to the other users.

Salvaged water, on the other hand, would not be given a priority free from call on the stream since this water was part of the stream and was simply being denied to senior appropriators as a result of the practice of wasting it. And, to recognize such senior rights to salvaged water would raise havoc with the traditional appropriation doctrine and give a "last in time, first in right" effect. Salvaged waters are appropriable, but they are given no preference with regard to priority.

As previously stated, title to all of the surface and underground water of the state of Colorado is the property of the public, and is "dedicated to the use of the people of the state."[5] Once the waters have been applied by the appropriator to a beneficial use, the right of the use of the water passes to the appropriator and he obtains a real property right (Denver v. Sheriff, 105 Colo. 193, 96 P.2d 836, 1939). This right to use water has been referred to by many terms. In the case of Wyatt et al. v. Larimer et al. Co., the court stated that:

> The appropriator becomes the proprietor of the water or the user of the water--it is immaterial which term is used, they are in effect the same --and he remains the proprietor owner of the use, so long as the beneficial use to which it was appropriated is continued (18 Colo. 298, 33 P. 144, 1893).

In the Coffin case, the courts state that the right to the use of the water is an "usufruct" and when one acquires this right, it is an "usufructuary" right (Coffin v. Left Hand Ditch Co., 6 Colo. 443, 1882). Specifically an usufruct is the right of enjoying a thing, the property of which is vested in another (in this case the state) and to draw from the same all the profit, utility, and advantage which it may produce providing it be without altering the substance of the thing (Black's Law Dictionary, 4th Edition, revised, 1968).

The nature of the water right and the right to the actual water must be distinguished. Once water has been appropriated and diverted from a natural stream into ditches or other artificial works, it then becomes personal property (Tongue Creek Orchard Co. v. Town of Orchard City, 131 Colo. 177, 280 P2d 426, 1955). A water right when perfected by appropriation and beneficial use constitutes realty in the nature of a possessory right (Knapp v. Colo. River Water Conservation District, 131 Colo. 42, 279 P.2d 420, 1955). But, it cannot be said to have achieved the same dignity as an estate in fee or a freehold estate because it is dependent upon the continuous use of the water (Ibid.). The right which an appropriator gains is a private property right, subject to ownership and disposition by him as other private property (Denver, v. Sheriff, supra). In Comstock v. Olney Springs Drainage District (97 Colo. 416, 50 P2d 531, 1935) the Colorado Supreme Court stated that the appropriative right is an interest in real property. In summary, the water right is a real property right; the water is public property until diverted into the right holder's conveyance system, upon which time it becomes his personal property. The unconsumed waters, which escape the right holder's control and domain, revert back to public property status, subject to appropriation or use by other vested right holders.

3.2.2. Acquisition of Right

General--
Colorado is unique in its system of acquiring water rights. Unlike most of her sister states, she has a different system for acquiring water rights to waters classified as surface and tributary ground waters and those classified as designated ground waters. For the former, no administrative steps are required, but to obtain a perfected water right with a priority date, a procedure in special water courts, hereinafter described, must be followed. For non-tributary ground water, the state has adopted a permit system.

In Colorado, prior to 1969, there were two requirements to be met in order to acquire a water right. First, there must be a taking of the water and, second, it must be applied to a beneficial use (Black's Law Dictionary, 4th Edition). The term "taking" has usually referred to the physical act of diverting water from the stream or channel (Arizona v. California, 56 S. Ct. 848, 298 U.S. 558). but this condition was changed in 1969 with a redefinition of appropriation to mean the application of certain portions of the waters of the state to beneficial use (Colorado Springs v. Bender, 148,

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[5] For cases dealing with right to use by people, see Wyatt v. Larimer and Weld Irrigation Co., 1 Colo. App. 480, 29 P.906, 1892; Monte Vista Canal Co. v. Centennial Irrigation Co., 22 Colo. App. 364, 123 P. 831, 1912; La Plata River Co. v. Hinderlider, 93 Colo. 128, 25 P.2d 187, 1933.

Colo. 458, 366 P.2d 552, 1961). However, an appropriator cannot "take" the whole stream to insure that he receives his due amount (33 Colo. 392, 81 P. 37, 1905).

The Colorado Constitution states that "the right to divert the unappropriated waters of any natural streams to beneficial uses shall never be denied (Colorado Constitution, Article XVI, Section 6). In Colorado, however, as in most appropriation states, the right to appropriate water is limited (1) if there is no unappropriated water available from the proposed source; (2) if the granting of the right would harm an existing water right; (3) if the proposed appropriation is contrary to the public welfare; and/or (4) if the right is limited on the basis of the time during which the water may be used (C.R.S. §37-82-104). It has also been held that, when an appropriator makes use of the water during certain days of the year, other parties are allowed to acquire the portion of the right unused (Cache la Poudre Reservoir Co. v. Water Supply and Storage Co., 25 Colo. 161, 53 P.331, 1898).

One of the best statements on the subject of appropriation and its requirements is set forth in the case of City and County of Denver v. Northern Colorado Water Conservancy District (130 Colo. 375, 276 P.2d 992, 1954). Therein, concerning the basic law of appropriation in Colorado, Justice Stone stated:

> (1) that priority of appropriation shall give the better right as between those using the water for the same purpose; (2) that as to the rights here involved, a municipal corporation has no different status from that of an individual or any other party to the proceeding; (3) that although an appropriation is not complete until actual diversion and use, still, the right may relate back to the time when the first open step was taken giving notice of intent to secure it . . . ; (4) that right to relate back is conditional that construction thereafter was prosecuted with reasonable diligence, and conditional further that there was then a fixed and definite purpose to take it up and carry it through (Ibid. at 377, 276 P.2d at 994).

The above case specified that diversion is the physical act of taking the water from the stream (130 Colo. 375, 386, 276 P.2d 992, 998, 1954). Several cases have held that the method by which the water is removed is immaterial (Thomas v. Guiraud, 6 Colo. 530, 533, 1883; Colorado River Water Conservancy District v. Rocky Mountain Power Co.,158 Colo. 331, 406 P.2d 798, 1965; Genoa v. Westfall, 141 Colo. 533, 349 P.2d 370, 1960. Note there must be a segregation of the claimed resource from that which is not claimed). For example, in Town of Genoa v. Westfall, a prior and valid appropriation was claimed through customary watering of cattle directly from the stream without any diversion by artificial means (141 Colo. 553, 349 P.2d 370, 1960). The court upheld the priority and thereby recognized the appropriation as valid when it ruled that:

> It is not necessary in every case for an appropriator of water to construct ditches or artificial ways through which the water might be taken from the stream in order that a valid appropriation be made. The only indispensable requirements are that the appropriator intends to use the waters for a beneficial purpose and actually applies them to that use (Ibid. at 547, 349 P.2d at 378).

The traditional and basic requirements for the establishment of a water right under the "Colorado Doctrine" have been (1) intent to apply to beneficial use; (2) actual diversion of the water; and (3) application to beneficial use. In the above ruling, the court seemed to eliminate the second of these requirements. This decision appeared, at first, to depart from the position taken in City and County of Denver v. Northern Colorado Water Conservancy District when the court denied Denver the right to store water for transport at a later date when tunnel space would be available (City and County of Denver v. Northern Colorado Water Conservancy District, 130 Colo. 375, 276 P.2d 992, 1954).

The confusion caused by the courts has been cleared up to some extent by the legislature which has defined a diversion as:

> . . . a means of removing water from its natural course or location, or controlling water in its natural course or location, by means of a ditch, canal, flume, reservoir, bypass, pipeline, conduit, well, pump, or other structure or device (C.R.S. §37-92-103(5)).

More to the point, a recent legislative declaration defines an appropriation as "the application of a certain portion of the waters of the state to a beneficial use (C.R.S. 37-92-103(3)). The word diversion is not mentioned. The statute goes on to allow the State of Colorado to:

> . . . appropriate for fisheries and wildlife (defined as a beneficial use) by maintaining minimum flows between specific points or levels on natural streams and lakes as are required to preserve the natural environment to a reasonable degree (C.R.S. 37-92-103(4)).

The most recent judicial interpretation holds that the "first step" in appropriating water must involve two elements (Central Colorado Water Conservancy District v. City of Denver, Colorado, 539 P.2d 1270, 1975). The first is an intent to take water. The second is to accompany the first by some open, physical demonstration of intent to put the water to beneficial use. The Supreme Court went on to say that the first step is always to be determined by the facts of each case,and filing maps was only an indication of intent. The second element of some open demonstration on land was not present, and thus an appropriation did not take place until the first step was completed.

Priority is determined in an adjudication proceeding before a water judge. An application is made to the diversion water clerk and may be referred to a referee or decided by a water judge. Priority means "the seniority by date as of which a water right will be entitled to use and the relative seniority of a water right or a conditioned water right in relation to other water rights and conditional water rights deriving their supply from a common source (C.R.S. §37-92-103).

Appropriators are entitled to a supply in the order of their priority. Thus, the most senior appropriator is entitled to his quantity without interference, (*Comstock v. Ramsey*, 55 Colo. 244, 133 P. 1107, 1913) even if his right is for storage for future use (*People v. Hinderlider*, 505 P.2d 894, Colo. 1936), even when there is insufficient water in the source of a common supply to meet the demands of junior appropriators (*Strickler v. Colorado Springs*, 16 Colo. 61, 26 P. 313, 1891).

Junior appropriators have a right to have stream conditions remain as they existed at the time of their appropriations (*Farmers Highline Canal and Res. Co. v. Golden*, 129 Colo. 575, 272 P.2d 629, 1954). An appropriator cannot change his manner of diversion and use of water in any way that would alter stream conditions to the injury of junior appropriators who are entitled to rely on the continuance of such conditions (*Enlarged Southside Irr. Ditch Co. v. John's Flood Ditch Co.*, 116 Colo. 580, 183 P.2d 552, 1947).

The following procedures are outlined in the statutes for filing an application for a water right before the appropriate water judge.[6]

1. Any person who desires a determination of a water right or a conditional water right and the amount and priority thereof, including a determination that a conditional water right has become a water right by reason of the completion of the appropriation, a determination with respect to a change of a water right, approval of a plan for augmentation or quadrennial finding of reasonable diligence, shall file with the water clerk in quadruplicate a verified application setting forth facts supporting the ruling sought, a copy of which shall be sent by the water clerk to the State Engineer and the Division Engineer.
2. Opposing statements may be filed with the Water Clerk, who provides copies of opposition to State and Division Engineers.
3. The (water right application) filing fee is $25; in filing a statement of opposition, the fee is $20.
4. Within sixty days from the last day on which statements of opposition may be filed with respect to a particular application, the referee shall make his ruling on such application unless he determines to refer the matter to the water judge. (Note: This ruling shall give the name or names of the applicants with respect to the water right involved, the location of points of diversion or storage and the means of diversion, the type of use, the amount and priority along with other pertinent information. In the case of augmentation, the ruling shall include a complete statement of the plan as approved or disapproved.) The ruling shall be filed with the water clerk and shall become effective with such filing. It shall then be mailed by the water clerk by certified mail to the applicant and to each person who filed a statement of opposition and to the Division Engineer and State Engineer.

   Within twenty days after the date of mailing, any person who wishes to protest a ruling of the referee shall file a written protest with the water clerk and a copy thereof with the referee. This protest shall clearly identify the ruling being contested and shall state the factual and legal grounds for the protest. The fee for filing a protest is twenty dollars plus additional costs for mailing except that a person who was a party to the action is not required to pay the twenty-dollar filing fee. For each appearance filed by an interested party, the twenty-dollar filing fee does apply if he were not an applicant or protestant to the original action.
5. The Water Judges are required to provide the clerks with standard forms to be used for applications.
6. No later than the end of the month, the Water Clerk is directed to publish a resume of applications in a newspaper or newspapers sufficient to achieve general circulation. This procedure may be augmented by radio and television broadcasts at the discretion of the Water Judge.
7. No later than the end of the month, a copy of the resume will be sent to each person whom the referee believes would be affected by the action.
8. Within sixty days from the last day on which statements of opposition are filed, the referee shall make his ruling. The referee may disapprove the application in whole or in part, he may approve it or send the matter to the Water Judge.
9. The Water Judge (on the date set forth) is directed by law to consider cases referred to him for the past six months and select a hearing date.
10. In cases where a protest has been filed or matters referred by the referee to the judge, a hearing will be held. The judge is not bound by the findings of the referee.
11. A decision of the Water Judge with respect to a protested ruling of the referee shall either confirm, modify, reverse, or reverse and remand such ruling. The judge shall confirm and approve a ruling of the referee with respect to applications in which no protest was filed . . .
12. Appellate review shall be allowed to the judgment and decree, but none will be allowed with respect to that part of the judgement of decree which confirms a ruling with respect to which no protest was filed.

In making a determination of the water right, the following standards are required by law to be considered (C.R.S., §§37-92-305(1), (3), and (5)).

1. Priority date awarded shall be that date on which the appropriation was initiated if the appropriation was completed with reasonable diligence.
2. A change of water right or plan for augmentation shall be approved if such change will not injuriously affect the owner of or persons entitled to use water under a vested water right of a decreed conditional water right.
3. Any substituted water shall be of a quality and quantity so as to meet the requirements the senior appropriator has normally been used to.

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[6] A discussion of the water courts' structure can be found in 10.3.2, infra. Each Division Water Judge has authority, under C.R.S., §37-92-302(2), to prepare forms and regulations for his division.

Three cases have decided problems of interpreting the statutes just set forth. The first case, *Baumgartner v. Stremel*, held that the Water Court set up under C.R.S., §37-92-101 et seq., did not have exclusive jurisdiction over matters of water distribution and use (496 P.2d 705 Colo. 1972). Rather, the District Court has jurisdiction to prevent irreparable injury and to enforce court orders designed to prevent such injury. This type of injury includes using more water than is necessary to irrigate land.

The question of jurisdiction arose again in *North Kiowa-Bijou Management District v. Ground Water Commission* wherein a landowner sought to export water outside the District boundaries (505 P.2d 377 Colo. 1973). The District refused the request to export an amount equal to what the plaintiff was entitled to consume under the laws of appropriation. The landowner appealed to the Water Commission. The District objected that the Commission did not have jurisdiction to hear the appeal. The Court held that:

1. The statutes take precedence over the Administrative Code. Under C.R.S., §37-92-102 et. seq., the administration of ground water is placed in the Water Commission, but the review provisions of §§37-90-130 to 37-90-131 relate only to promulgation and adoption by the local districts of proposed regulations. These regulating provisions do not speak to individual actions taken by the District concerning interpretation, enforcement, or compliance with District rules.

2. The District Court is the competent review body for the Districts within each court's jurisdiction.

The third case interpreting these statutes was *In Re Water Rights in Irrigation Division No. 1, Irrigation District No. 1* in which petitions sought to transfer well water 8,000 feet from the land on which it was recovered. This was in violation of the District policy of using well water only on the land specified in the permit to dig the well (510 P.2d 323, Colo. 1973). The court held that:

1. The Water Commission could review rules and regulations generally applicable to users within the District but that specific decisions were to be adjudicated by District Court in accordance with *North Kiowa-Bijou District v. Ground Water Commission* (505 P.2d 377, Colo. 1973).

2. The setting up of an administrative agency to administer ground water was not a constitutional violation.

According to the statutes, a person who desires to construct and maintain a reservoir shall have the right to store therein any of the unappropriated waters of the state not thereafter needed for immediate use for domestic or irrigating purposes, to construct and maintain ditches for carrying such water to and from such reservoirs, and to condemn lands required for the construction and maintenance of such reservoirs and ditches in the manner provided by law (C.R.S., §37-87-101). The owner of the reservoir may discharge waters into a natural stream (C.R.S., §37-87-102), but may not cause abnormally high water levels in the stream; however, notice must be given to the Division Engineer of the Irrigation Division of the intent to release such water (C.R.S. §37-87-103). If damage occurs from such release or from overflow of the reservoir, the owner of the reservoir is liable for the damage caused.

If a dam has a capacity of one thousand acre-feet, is ten or more feet in vertical height, or has a water line surface area of twenty feet, the specifications for the dam must be approved in advance by the State Engineer (C.R.S., §37-87-105). The expenses incurred by the State Engineer in this approval phase are borne by the owners of the reservoir. They bear the cost of inspection and supervision as well (C.R.S., §37-87-106). Dams of ten feet or less shall also be subject to approval by the State Engineer (C.R.S., §37-87-117; also §37-87-122, 1973 for controls on erosion control dams). The amount of water that is safe to be stored in the reservoir shall be determined annually by the State Engineer (C.R.S., §37-87-108), and it is the duty of the Water Commissioner of the district to withdraw any excess amount and to see that the reservoir is not refilled beyond its specified safe limits (C.R.S., §37-87-108).

Ground Water--
Traditionally, groundwater has been defined as that water which is found under the surface of the earth and in Colorado is administratively divided into two categories: (1) ground water which contributes little or no flow to surface streams, does not affect vested surface water rights, and comes under the jurisdiction of the Colorado Ground Water Commission and (2) all other underground water under the jurisdiction of the Colorado State Engineer (Kuiper, 1976). The former is called "Designated Ground Water," and the latter is divided into waters tributary and non-tributary to a stream.

Little legislative or court action is found concerning ground water in the early history of Colorado due to the lack of extensive use of ground water supplies until recently. The first legislative step toward controlling ground water occurred in 1953, following the Supreme Court's finding in *Safranek v. Limon* (123 Colo. 330, 228 P.2d 975, 1951), that Colorado water law was deficient with respect to ground waters. The law authorized ground water studies, required licensing well drillers, and filing well logs, creation of "Critical Ground Water Districts" (C.R.S., 1953. Art. 18, Chapter 147).

The first substantive "ground water law" was passed in 1957 and was applicable to all subsurface waters (Law of May 1, 1957, Colorado Session Laws 863). The four major provisions of the law were: (1) by July, 1960, all ground water users must file statements with the State Engineer, setting forth such information as the nature, extent, location, and quantity of their withdrawals and use; (2) a ground water commission was created; (3) the commission had the power to designate "tentatively critical ground water districts in areas where the withdrawal of ground water appears to have approached, reached, or exceeded the normal rate of replenishment;" and (4) no new wells could be drilled or the supply from existing wells increased without first obtaining a permit from the State Engineer. This law sets the basic institutional framework for ground water allocation and management in Colorado. However, due to the particular limitation for maintaining an area as "critical" under the 1957 Act, it was repealed and reenacted in 1966 (Moses & Varnesh, 1966).

The present statutory status of ground water laws in Colorado is the result of two major legislative enactments and subsequent amendments to the basic acts. In 1965, the "Ground Water Management Act" was adopted (C.R.S. Ann., §§148-18-1 to 38, 1965 Supp., now cited as C.R.S., §§37-90-101 to 141). It primarily addressed the non-tributary waters. The lack of specific legislation or judicial guidance for tributary waters and the emerging problems in the Arkansas, South Platte, and Rio Grande Valleys led to the enactment of the Water Right Determination and Administration Act of 1969.

These two acts are thus consistent with an early Colorado decision recognizing two categories of ground water: (1) tributary ground water and (2) non-tributary ground water (*Medano Ditch Co. v. Adams*, 29 Colo. 317, 68 P.431, 1902). The court held the former refers to waters that, if left to flow, will become part of a natural stream, and the latter refers to waters which will not become part of any natural stream.

The General Assembly attempted to clarify classification and administration of ground water in 1965 with a legislative declaration of policy:

> It is declared that the traditional policy of the state of Colorado requiring the water resources of this state be dedicated to beneficial use in reasonable amounts through appropriation, is affirmed with respect to the designated ground waters of this state, as said waters are defined in Section 37-90-103(6). While the doctrine of prior appropriation is recognized, such doctrine should be modified to permit the full economic development of designated ground water resources. Prior appropriations of ground water should be protected and reasonable ground water pumping levels maintained, but not to include the maintenance of historical water levels. All designated waters of this state are therefore declared to be subject to appropriation in the manner defined in this article (C.R.S. §37-90-102).

The legislature went on to define designated ground water as:

> . . . that ground water which in the natural course would not be available to and required for the fulfillment of decreed surface rights, or ground water in areas not adjacent to a continuously flowing natural stream wherein ground water withdrawals have constituted the principal usage for at least fifteen years preceding the date of the first hearing on the proposed designation of the basin, and which in both cases is within the geographic boundaries of a designated ground water basin (C.R.S. §37-90-103(6)).

The key procedural features of the 1965 Act, which are designed to enable the state to allocate and manage the designated ground waters, are:

1. A permit system for acquiring rights to withdraw and use designated ground water was reinstituted (C.R.S. §37-90-107).
2. The Colorado Ground Water Commission was created within the Division of Water Resources to designate ground water basins and determine the allocation and administration of waters within the basins (C.R.S. §37-90-104).
3. Authority and jurisdiction over administration and distribution of waters and protection of vested rights was granted to the State Engineer which provided flexibility in this office to grant permits for small capacity wells and wells in deep aquifers (C.R.S. §§37-90-104 and 137).
4. The formation of water management districts to continue the administration and management of waters within designated ground water basins was authorized.

Any person desiring to appropriate ground water for a beneficial use in a designated ground water basin is required to make application to the Ground Water Commission (C.R.S. §37-90-107). The applicant is required to state the designated ground water basin from which the water is to be appropriated, the beneficial use to which it will be applied, the location of the proposed well, the name of the landowner of whose land the well will be located, the amount of water to be applied annually, and the maximum pumping rate of the well; and, if the water is to be used for irrigation, the name of the landowner and description of the land must be submitted. The Commission then makes a preliminary evaluation of the application; if conditions are favorable under existing rules then, within thirty days, the application shall be published (C.R.S. §37-90-107(2)). If no objections are filed and the Commission feels that no damage will be caused by the well and that it will not contribute to unreasonable waste, it shall direct the State Engineer to issue a conditional permit (C.R.S. §37-90-107(3)).

If objections were filed, then a hearing date is set by the Commission. The hearing is held in the designated ground water basin in which the proposed well will be located. If the findings of the Commission are that no unappropriated water exists, that the well would lead to damage to other wells, or that excessive waste would occur, then the permit will be denied (C.R.S. §37-90-107(4)). In making its decision, the Commission is directed to consider such aspects as (1) the area; (2) geographic conditions; (3) average annual yield and recharge rate; (4) priority and quantity of existing claims; (5) proposed method of use; and (6) any other appropriate considerations (C.R.S. §37-90-107(5)).

Having received a conditional decree from the State Engineer, the applicant must proceed with "due diligence" in the construction of the well and apply the water to a beneficial use (C.R.S. §37-90-108(1)). Once the work has been completed, the applicant then must submit to the Commission information concerning the maximum sustained pumping rate of the well in accordance with the steps outlined in §37-90-108(1)). of the Colorado Revised Statutes. If all requirements of the Commission have been met and the water has been put to a beneficial use, the Commission will direct the State Engineer to issue a final permit to use designated ground water at a given rate (C.R.S. §37-90-108(2)).

Concerning the priority date established for wells, the law states that "priority of claims for the appropriation of designated ground water shall be determined by the doctrine of prior appropriation" (C.R.S. §37-90-109(1)). Prior to the enactment of the above mentioned article, the effective date of the appropriation was based on the actual removal of designated ground water and its application to a beneficial use. Subsequent to the passage of the appropriate sections, the effective date of an appropriation is based on the date of filing an application with the Commission.

The right to use water under a permit from the Ground Water Commission is for use only upon the lands designated in the application. These water rights are thus appurtenant to specific lands and cannot be used to irrigate other lands without first receiving authorization from the Commission.

There are two classes of waters which have been exempted from control by the Commission. The first is small capacity wells in designated ground water basins. The State Engineer is authorized to approve permits on small capacity wells not exceeding fifty gallons per minute and used for no more than three single-family dwellings, but not used to irrigate more than one acre of land; not exceeding fifty gallons per minute and used for watering livestock on range and pasture and wells; not exceeding the fifty gallon limit and used in commercial business (C.R.S. §37-90-105(1)).

If a ground water management district has been formed for the basin, it may place restrictions upon the issuance of such permits.

The second class of water that falls within a difficult area of jurisdiction is the deep aquifer and other non-tributary waters outside designated ground water basins. The law states that, after May 19, 1965, no new wells outside designated ground water basins shall be constructed nor shall water supplies be increased or extended from existing wells outside designated basins unless a permit from the State Engineer to construct a well is acquired. The application must specify the particular aquifer from which the water is to be diverted, the beneficial use to which the water will be applied, the location of the proposed well, the name of the owner of the land on which the well will be located, the average annual amount of water to be applied, the proposed maximum pumping rate, and, if used for irrigation, the name of the owner of the land and its description (C.R.S. §37-90-137(1)).

Upon receiving an application for a replacement well or a new, increased, or additional supply of ground water from an area outside the boundaries of a designated ground water basin, the State Engineer is to make a determination as to whether or not the issuance of such a permit will materially injure the vested rights of others, and whether hydrological and geological facts are such that they warrant the issuance of a "permit to construct a well" (C.R.S. §37-90-137(2)). The State Engineer is limited in his ability to issue a permit by the requirement that the proposed well must be a distance of more than 600 feet from an existing well, unless the "facts are such to allow its construction" (C.R.S. §37-90-137(2)).

A permit to construct a well expires one year after the issuance unless the applicant provides the State Engineer with evidence that the water from the well has been put to a beneficial use. For good cause shown, the State Engineer is empowered to extend the permit to construct for a period not to exceed one additional year (C.R.S. §37-90-137(4) (a)).

The 1965 Ground water Management Act resolved the major issues of water allocation and administration for non-tributary waters, but the tributary water problem was still to be faced. The current law governing tributary water within the state was passed in 1969 and is known as the "Water Rights Determination and Administration Act of 1969." The legislative declaration of the Act acknowledges the interrelationship of ground and surface waters:

> It is the policy of this state to integrate the appropriation, use and administration of underground water tributary to a stream with the use of surface water in such a way as to maximize the beneficial use of all the waters of this state (C.R.S. §37-92-102(1)).

Waters of the state are defined as:

> . . . all surface and under ground water in or tributary to all natural streams within the state of Colorado, except waters referred to in Section 37-90-103(b) (which refers to the definition of "designated ground water" under the 1965 Act) (C.R.S. §37-92-103(13)).

Underground waters are defined as:

> . . . that water in the unconsolidated alluvial aquifer of sand, gravel and other sedimentary materials, and all other waters hydraulically connected thereto which can influence the rate or direction of movement of the water in that alluvial aquifer or natural stream. Such 'underground water' is considered different from 'designated ground water' as defined in section 37-90-103(6) (C.R.S. §37-92-103(11)).

To carry off this policy, and in full recognition of the inadequacy of past laws on the subject, the legislature set out the following principles to be applied in developing a sound and flexible program of integrated water use in the state. They are:

1. All previously vested rights and uses protected by law, including an appropriation from a well, shall be protected.
2. The present use of wells, either independently or in conjunction with surface rights shall be given the fullest possible recognition. However, this principle will be limited by existing vested rights. Each diverter must establish a reasonable means of diversion and he cannot command the whole flow to take his appropriation.
3. Use of a well may be an alternate or supplemental source for a surface decree.
4. No junior appropriator can be limited unless this reduction would result in an increased water supply available to the senior appropriator (C.R.S. §37-92-301).

The significance of the 1969 Act, aside from its setting policy to integrate the surface and ground waters of the state, is the approaches and procedures it advocates. The Act creates a unique system of water administration in the state with various power divided between the water courts established in each of the seven water divisions and the Office of State Engineer and the division engineers. The courts approve applications for water rights and adjudicate such rights while the State Engineer and his staff have responsibility for administration and distribution of the waters of the state. Since, under the doctrine of prior appropriation, water shortages require shutting off junior diversions, the ultimate effect upon most well users is restricted pumping. However, the law provides the opportunity for water users to develop an "augmentation plan" to prevent strict regulation under priorities (C.R.S. §37-92-307). Other important features of the law provide for obtaining an alternate point of diversion (C.R.S. §37-92-301(a) and (d)), adjudicating wells (C.R.S. §37-92-601), and exempting certain wells from adjudication requirements (C.R.S. §37-92-602).

Regarding exempt wells, the 1969 Act is not applicable to wells in designated ground waterbasins, wells not exceeding fifteen gallons per minute of production and used for ordinary household and farm purposes, and irrigation of not over one acre of home gardens and lawns, or used for drinking and sanitary facilities in individual commercial businesses; wells to be used exclusively for fire-fighting purposes if capped, locked, and available for use only in fighting fires; and wells not exceeding fifty gallons per minute which are in production as of the effective date of this section as amended, and were and are used for ordinary household purposes for not more than three single-family dwellings, fire protection, the watering of poultry, domestic animals, and livestock on farms and ranches, and the irrigation of not over one acre of gardens and lawns (C.R.S. §37-62-602(1) (a to e)).

Prescriptive Water Rights--
In addition to acquiring water rights under court and administrative methods set out by statute, water rights can be acquired by prescription. There must be an open, notorious, adverse use of the water throughout the statutory period, under a claim of right in order to obtain a prescriptive title. No adverse use occurs when the supply of water is sufficient for all. An adverse user must use the water in such a manner so as to notify the owner that his water is being adversely used, and the owner must acquiesce, making no claim to the water (Clark v. Ashley, 34 Colo. 285, 82 P.588, 1905). In Lomas v. Webster (109 Colo. 107, 122 P.2d 248. 1942), the court held that as between an original appropriator and owner, an adjoining land owner cannot acquire a prescriptive right to waste or seepage water.

Preferences--
With the water laws of most every western state, there are provisions which set up a preference between types of water users. Distinct from the priority between water users, which is ranking date of all users based upon date of application or other criteria, the preference designation serves the purpose of (1) a basis for granting a water right between two or more competing applicants for different uses and (2) during times of scarcity, the preferred user can condemn a non-preferred user's right to water, upon payment of just compensation. The preference is not self-executing, but must be exercised by condemnation action (Town of Sterling v. Pawnee Ditch Ext. Co., 42 Colo. 421, 94 P. 339, 1908).

The Colorado Constitution states that under the preference system:

> Priority of appropriation shall give the better right as between those using the water for the same purpose; but when the waters of any natural stream are not sufficient for the service of all those desiring the use of the same, those using the water for domestic purposes shall have the preference over those claiming for any other purpose, and those using the water for agricultural purposes shall have preference over those using the same for manufacturing purposes (Article XVI, Section 6).

In the case of Montrose Canal Company v. Loutsenhizer Ditch the courts stated that:

> The (domestic) use protected by the constitution is such as the riparian has at common law to take water for himself, his family or his stock, and the like. And if the term 'domestic use' is to be given a different or greater meaning than this, then as between such enlarged use and those having prior rights for agricultural and manufacturing purposes, it is subject to that other constitutional provision requiring just compensation to those whose rights are affected thereby (23 Colo. 233, 48 P.532, 1896).

3.2.3 Adjudicating Water Rights

Colorado's constitution declares that the right to divert and put unappropriated water to a beneficial use shall never be denied (Colo. Const. art. XVI, sec. 6). Thus, the method of appropriation historically has been to take unappropriated water and apply it to a beneficial use (Board of County Commissioners v. Rocky Mountain Water Co., loc. cit.).

An appropriator is required to have a reasonable means of diversion and an appropriator cannot command the whole flow of a stream just to aid his taking a fraction of the whole flow to which he is entitled (Colorado Springs v. Bender, 148, Colo. 458, 366 P.2d 552, 1961). In Fort Lyon Canal Co. v. Chew, (33 Colo. 392, 81 P.37, 1905), the court held that an appropriative right could not be enlarged or extended beyond an amount beneficially needed and used for the original undertaking for which the priority was awarded. Thus a priority will be enforced against junior appropriators only to the extent of that water which has been historically needed and used by the senior appropriator (Enlarged Southside Irr. Ditch Co. v. John's Flood Ditch Co., 116 Colo. 580 183 P.2d 552. 1947).

3.2.4 Conditions of Use

Beneficial Use--
Colorado law defines beneficial use as "the use of that amount of water that is reasonable and appropriate under reasonably efficient practices to accomplish without waste the purpose for which appropriation is lawfully made and without limiting the generality of the foregoing includes the impoundment of water for recreational purpose, including fishery or wildlife" (C.R.S.§37-92-103). Beneficial use is the basis, the measure, and the limit of the right to use water (Denver v. Sheriff, 105 Colo. 193, 96 P.2d 836, 1939), and priority in time confers a prior right (Colo. Const. Art. XVI, Sec. 6.). Uses recognized as beneficial are domestic, agricultural, industrial, municipal and recreational. (Ibid.) Denver v. Sheriff (Supra.) held that an appropriator cannot divert more water than he reasonably needs for his intended beneficial use. The amount depends upon the nature, place and time of use and varying duties of water can be established dependent upon circumstances of each case (Farmers Highline Canal and Res. Co. v. Golden, loc. cit.).

Thus, the concept of beneficial use prescribes the types of uses and the basis for determining or measuring the water right. An appropriative right cannot be enlarged or extended beyong the amount beneficially needed and used for the original undertaking for which the priority was awarded (Fort Lyon Canal Co. v. Chew, 33 Colo. 392, 81 P.37 1905).

In order to have a valid appropriation the water must be applied to a beneficial use (Combs v. Agricultural Ditch Co., 17 Colo. 146, 28 P.966, 1892). In City and County of Denver v. Brown (56 Colo. 216, 138 P.44 1914), the court held that an appropriator is not entitled to have water turned out to him unless it can be beneficially used. The measure of an appropriation depends upon the amount diverted and the amount which is applied to a beneficial use (Woods v. Sargent, 43 Colo. 268, 95 P.932, 1908).

Waste--
Waste of water can be considered the opposite of using the water beneficially. Waste water can be defined as that water which is not needed by the claimant thereto; water which after it has served the purpose of the lawful claimant, has been permitted to run to waste or to escape, and water which from unavoidable causes escapes from the ditches, canals, or other works of the lawful claimant. (89 A.L.R. 200).

Waste water is not considered to be waste water until it has escaped and reached the lands of others (Burkart v. Merberg, 37 Colo. 187, 86 P.98, 1906). Whether we limit the definition of use by applying the term beneficial, reasonable, or economical, the affect is to limit the waste of water.

In Tongue Creek Orchard Co. v. Town of Orchard City (loc. cit.), the court stated that it is an appropriator's duty to prevent waste so that others who are entitled to the water may receive the benefits of that water. An irrigator has no right as against a junior appropriator to waste water (Enlarged Southside Irrigation Ditch Co. v. John's Flood Ditch Co., Supra.) and the junior consequently has a right to prevent waste of water by a senior and to have the continuation of stream conditions as they existed at the time of his appropriation (Farmers Highline Canal & Reservoir Co. v. City of Golden, 129 Colo. 575, 272 P.2d 629, 1954).

In Durkee Ditch Co. v. Means (63 Colo. 6, 164 P.503, 1917), the court stated that seepage, waste, and return waters were to be considered as part of the stream from the moment the waters were released by the user and the waters must be permitted to return to the stream for the benefit of other appropriators. Colorado Revised Statutes, section 37-84-107 provides that an owner of an irrigation ditch must keep such ditch in good repair to prevent the wasting of water. An appropriator cannot allow a quantity of water to flow through his ditch which is in excess of his needs (C.R.S. §37-84-108). Section 37-84-101 commands that the owners of any irrigation ditch maintain the embankments and to construct a tail ditch to permit return waters to return to the stream with as little waste as possible. However, there is no obligation upon an owner to continue to maintain conditions so as to supply waste water to appropriators (Fair Play Hydraulic Mine Co. v. Western, 29 Colo. 125, 67 P.160, 1901).

Colorado has also adopted a law which limits excess agricultural water uses. This provision states that:

> During the summer season it shall not be lawful for any person to run through his irrigating ditch any greater quantity of water than is absolutely necessary for irrigating his land, and for domestic and stock purposes, it being the intent and meaning of this section to prevent the wasting and useless discharge and running away of water (C.R.S. §37-84-08).

Maximum Utilization v. Vested Water Rights--
A well known doctrine was given judicial recognition and standing in Fellhouer v. People (167 Colo. 320, 447 P.2d 986, 1968). This doctrine is the concept of maximum utilization of the state's waters which the court holds is implicit in the Colorado Constitution along with the doctrine of vested rights. The court goes on to say that "as administration of water approaches its second century the curtain is opening upon the new drama of 'maximum utilization' and how constitutionally that doctrine can be integrated into the law of 'vested rights.' We have known for a long time that the doctrine was lurking in the background as a result of the accepted, though oft violated principle that the right to water does not give the right to waste it" (Ibid.). And a few years later in Kuiper v. Well Owners Conservation Association (176 Colo. 119, 490 P.2d 268, 1971), the Colorado Supreme Court went on to say that "In Fellhauer, we attempted to sound the note of a new era in the utilization and optimal use of water." Noting the slight indication of reluctance to change in use practices by the plaintiff and trial court, they continued, "there must be change, and courts, legislators, the State Engineer and users must recognize it. We recognize that future research and testing may prove erroneous some of the things we found were predominantly shown in the record. By the same token, further research and testing will not only result in correction of past mistakes, but also will lead us closer to the goal of minimal waste of water" (Ibid.).

3.2.5 Manner in Which Rights May be Adversely Affected

Abandonment--
Colorado has no forfeiture statute, but a water right can be lost by abandonment, adverse possession, and condemnation. Abandonment procedures are instituted by either (a) civil suit, or (b) through administrative initiative by the State Engineer. Under the latter, when an appropriator has failed for a period of ten years to apply his water to a beneficial use, a rebuttable presumption of abandonment arises (C.R.S. §§37-92-402, 37-92-103). Detailed administrative procedures for the operation of administrative abandonment are set forth in C.R.S. section 37-92-402.

Abandonment in a civil suit results from a claim to water by a user based upon the nonuse of a water right holder. Abandonment of a water right is defined in the statutes as the termination of a water right in whole or in part as a result of the intent of the owner to discontinue the use permanently (C.R.S. §37-92-103). To abandon means "to forsake; give up wholly; quit; to discontinue, desert, relinquish, surrender, vacate, or give up" (Putnam v. Curtis, 7 Colo. App. 437, 431 P.1056, 1894). The mere nonuse of a water right does not work as abandonment (Fruit Growers Ditch Reservoir Co. v. Donald, 97 Colo. 264, 41 P.2d 516, 1935), but in the New Mercer Ditch Co. v. Armstrong Water Commission (21 Colo. 357, 40 P.989, 1895), the court held that an appropriator cannot for an unreasonable time hold water for speculative purposes and make no beneficial use of it or divert more than he needs for the purpose for which the diversion was made.

The party who seeks to prove the abandonment has the burden of proof (White v. Nuskolls, 49 Colo. 170, 1910). When a priority has been abandoned other users on the stream can appropriate such waters in the order of their priorities (North Boulder Farmers Ditch Co. v. Legett Ditch Reservoir Co., 63 Colo. 522, 168 P.742, 1917). If a water right has been obtained by deed, then abandonment cannot take place until sufficient time has passed to create a prescriptive right in another user, which is 20 years (Fruit Growers Ditch and Reservoir Co. v. Donald, loc. cit.). A period of 40 years of nonuse has been held to be prima facie evidence of an intent to abandon (Ibid.).

Justification for nonuse may exist if economic, legal or financial problems or natural disaster prevents the use of decreed waters (Colorado River Water Conservation District v. Twin Lakes Reservoir Canal Co., 506 P.2d 1226, Colo. 1973).

Adverse Possession--

To obtain a right to water through adverse possession the use must be open, notorious and adverse; under a claim of right. Thus, an adverse user must use the water in such a way so as to notify the owner that his water is being adversely used and the owner must acquiesce, making no claim to the water (109 Colo. 107, 122 P.2d 248, 1942). Therefore, no adverse user must use the water in such a way so as to notify the owner that his water is being adversely used and the owner must acquiesce, making no claim to the water (109 Colo. 107, 122 P.2d 248, 1942). Therefore, no adverse use can occur when the supply of water is sufficient for all users exercising their water rights.

In the case of Dzuris v. Hucharih (164 Colo. 278, 434, P.2d 414, 1967), the court stated that:

> For adverse possession to be effective as a means of acquiring title, the possession of the adverse claimant must be such that the true owner is wholly excluded therefrom. Any sort of joint or common possession by the adverse claimant and the record owner prevents the possession of the one claiming adversely from requisite quality of exclusiveness.

Colorado has two statutes that relate to the period of time under which adverse possession is governed. Under the first, eighteen years is the time period required to establish evidence of absolute ownership (C.R.S. Ann. §118-7-1; also Winter v. Tarabino, 173 Colo. 30, 1970). However, if the person claiming adverse possession has paid all of the taxes legally assessed, then the period required is only seven years (C.R.S. Ann. §118-7-8).

Eminent Domain and Condemnation--

Eminent domain has been defined as "the right to take private property for public use" (Robert E. Clark, ed. Water and Water Rights, Vol. 4, Indianapolis: The Allen Smith Co., 1970, p. 3, Footnote 1). With respect to eminent domain, two aspects are generally considered. First, public use is a requirement and, secondly, there must be a necessity or an adequate reason for taking. The term "necessity" is usually implied to mean a reasonable necessity. Specifically:

> It does not mean absolute or indispensible or immediate need . . . It extends also to the taking of property which is reasonably necessary, and for which a need will probably exist within a reasonable time (Ibid., p. 11).

Before private property can be taken for public use in any state, it must be authorized by the respective state legislature. When eminent domain is exercised, compensation must be made for the property taken or destroyed. Article II, §15 of the Colorado Constitution states, in part, that:

> Private property shall not be taken or damaged, for public or private use, without just compensation. Such compensation shall be ascertained by a Board of Commissioners, of not less than three freeholders, or by a jury, when required by the owner of the property, in such manner as may be prescribed by law, . . .

Article XVI, §7, of the Constitution prescribes the rights-of-way allowed for conveying water and requires that just compensation be paid. It states:

> All persons and corporations shall have the right-of-way across public, private, and corporate lands for the construction of ditches, canals, and flumes for the purpose of conveying water for domestic purposes, for the irrigation of agricultural lands, and for mining and manufacturing purposes, and for drainage, upon payment of just compensation.

Article II, §25, the due process clause of the Colorado Constitution, states that "no person shall be deprived of life, liberty, or property, without due process of law."

Under certain circumstances, private condemnations are allowed as long as they can be proven essential to the public interest. "The controlling factors are local needs and conditions, and state legislature and judicial appraisals of these factors are given greatest deference by federal courts" (Clark, Waters and Water Rights, op. cit., p. 73). Clark points out that "whether condemnation of water, or condemnation to facilitate the use of water, will be allowed in a specific case depends upon the application of the public use decisions to the specific use in controversy, plus (1) constitutional provisions; (2) water preference policies; (3) identity of the condemnor; and (4) necessity under local conditions" (Ibid, p. 74).

In 1975, the Colorado Legislature was called upon to deal with the procedure for condemnation of water rights by municipalities and counties. The problems arose because of increasing demands for water by the cities and towns in Colorado which conflicted with established, privately-owned water rights.

The procedure outlined by the legislature provides that a commission of three members is to be established in each case to determine the necessity of the proposed condemnation. This commission is to consist of one member of the area to be affected by the loss of the water, one member representing the community seeking the condemnation, and one member with no interest in the controversy.[7]

Before the hearing on the proposed condemnation may be held, it is the duty of the municipality to provide a community growth development plan outlining the present population and projected population growth and the resource requirements (C.R.S. §38-6-203, 1975). No condemnation is permitted to satisfy projected needs in excess of fifteen years in the future (C.R.S. §38-6-202(2), 1975). The plan to be submitted by the municipality is to set forth the effects of the proposed condemnation including the unavoidable adverse effects of such an action (C.R.S. §38-6-203(b) (III), 1975), along with alternative sources that may be acquired and the costs of acquiring these alternate sources (C.R.S. §38-6-203(b) (IV), 1975).

The commission has the option of finding whether the proposed condemnation is necessary, unnecessary, or premature (C.R.S. §38-6-207 (I through III), 1975). Anyone who wants to object to these findings may do so by filing a written objection before the time of trial set in district court in the area affected (C.R.S. §38-6-210, 1975). Failure to so object within the prescribed time results in a default (Ibid.). The burden of proof to change a finding, award, or assessment made by the commission is on the person objecting thereto. The district court, for good cause shown, may modify or annul the report of the commission or may order a new appraisement or assessment as to the value of the property being condemned (Ibid.). One may demand a jury trial on the issue of appraisement or assessment (Ibid.).

In cases involving subdivisions, the State Engineer's duties include submitting to the County Commissioner a statement regarding material injury likely to occur to decreed water rights by virtue of the proposed diversion and use by the subdivision. In the event the subdivision is approved in spite of an opinion of a water shortage, all potential purchasers shall be furnished a copy of the opinion, unless, in the opinion of the County Commissioners, the subdivider has corrected the injury or inadequacy found in the State Engineer's report (Ibid.).

3.2.6 Legal Incentives and Disincentives for More Efficient Water Use Practices

Water Use Efficiency and Irrigation Return Flow--Early in Colorado's water law history, the courts ruled that "the rights of a prior appropriator from a (main) stream cannot be impaired by subsequent appropriations of water from its tributaries" (Strickler v. City of Colorado Springs, 16 Colo. 61, 26 P.313, 1891). This requirement applies also to cases where the tributary enters the main stream below the senior appropriator's point of diversion.

The courts have used the term "tributary to natural stream" in a broad sense (In re German Ditch and Reservoir Co., 56 Colo. 252, 139 P.2, 1914). The courts have been of the opinion that if water reached a stream by natural methods "and is appropriated in accordance with the law, the appropriator has a property in it which cannot be divested by the wrongful diversion by another, nor can there be any substantial diminution (McClellan v. Hurdle, 3 Colo. App. 430, 33 P.280, 1893). As noted earlier in Chapter 3, the Colorado Constitution established certain preferred uses; however, this does not mean that there can be a taking without just compensation (Sterling v. Pawnee Ditch Extension Co., 42 Colo. 421, 94 P. 339. 1908).

Regarding water quality, the courts have held prior appropriators have a right "to have the natural waters and all accretions come down the natural channel undiminished in quality as well as quantity" (Humphreys Tunnel and Mining Co. v. Frank, 46 Colo. 524, 105 P. 1093, 1909). Water quality is not an explicit element of a water right, rather it is a right of property under common law which the owner can enforce by action of nuisance, trespass, or negligence.

It has been stated that "in diverting, conveying, distributing, and using water the appropriator is held to reasonable efficiency--not absolute efficiency" (City of Combs v. Agricultural Ditch Co., 17 Colo. 146, 28 P.966, 1892). The Colorado courts have permitted construction of channels to divert water and:

> . . . the right to make and change the necessary dams, channels or other diversion works within the stream bed which might be necessary to enable them to continue the diversion of water at their headgate, provided no additional burdens were made upon defendants' lands thereby (Downing v. Copeland, 126 Colo. 373, 24 P.2d 539, 1952).

This decision is best viewed as being limited to the specific facts in this case; for it is clear that a right-of-way--but only one ditch per tract of land--may be claimed by one seeking to transport water (C.R.S. §37-86-113). The policy of Colorado law is to promote efficient use of water so it is difficult to see why improvements should not be allowed. Moreover, the proscription against burdening land extends to a diminution of water to a tract as a result of change in diversion, method, or location (Atencio v. Richfield Canal Co., 402 P.2d 620, 1972).

The courts have held that an appropriator has the right to repair and/or improve the physical works necessary to convey the water. Thus, the courts said that:

> The rule of law that gives junior appropriators a vested right to a continuance of conditions on the stream does not include the right to a continuance of the senior appropriators' misfortunes with their ditch (Flasche v. Westcolo Co., 112 Colo. 387, 149 P.2d 817. 1944).

The Colorado statutes also specify that a ditch company must "keep their ditch in good condition so that the water shall not be allowed to escape " (C.R.S. §7-42-108). In trying to sustain this goal of efficiency in water use, the courts have been inclined to view waste of water which will be judicially prohibited as that of "unnecessary waste" (Comstock v. Larimer and Weld Reservoir Co., 58 Colo. 186, 145 P. 700, 1914).

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[7] See G.E. Radosevich and M. Sabey, "Stability of Agricultural Water Rights," Proceedings of the 1975 Western Agricultural Economics Association Meetings, Reno, Nevada, 1975.

In trying to specify efficiency, the courts have examined what a reasonably adequate means of diversion would be. *They concluded in one case that:*

> . . . the court must determine what, if anything, the plaintiffs would be required to do to make more efficient the facilities at their point of diversion, due regard being given to the purposes for which the appropriation had been made, and the 'economic reach' of plaintiffs. The plaintiffs cannot reasonably command the whole 'source of supply' merely to facilitate the taking by them of the fraction of the entire flow to which their senior appropriation entitles them. On the other hand, plaintiffs cannot be required to improve their extraction facilities beyond their economic reach. upon a consideration of all the factors involved (Colorado Springs v. Bender, 148 Colo. 458, 366 P.2d 552, 1961).

This requirement was enacted into law in 1969 with a legislative declaration that the determination of water rights, uses and administration of water will follow a number of principles, one of which is: ". . . at his own point of diversion on a natural water course, each diverter must establish some reasonable means of effectuating his diversion. He is not entitled to command the whole flow of the stream merely to facilitate his taking the fraction of the whole flow to which he is entitled" (C.R.S. §37-92-102(2) (b)).

Rotation in the use of water avoids the loss and inefficiency that can result from "the continuous delivery to farms of a multiplicity of small 'heads' or 'streams,' as they are variously called" (Hutchins, Water Rights Laws in the Nineteen Western States, op cit., p. 616). The purpose of the rotation is "to enable irrigators to exercise their water rights more efficiently and, thus, to bring about more economical use of available water supplies" (Ibid., p. 617). The Colorado courts have held that "there is no vested right by one ditch co-tenant to rotation in use of water with another, in the absence of contract therefor. . . " (Brighton Co. v. Englewood, 124 Colo. 336, 237 P.2d 116, 1951).

Irrigation return flows occur from deep percolation, resulting from the over-application of water to the land, seepage from conveyance systems and tail water runoff. A downstream senior appropriator is entitled to have the stream flow in a sufficient quantity to satisfy his appropriation. Thus, an upstream junior appropriator cannot use water if that use would deprive the downstream senior of his appropriated quantity. C.R.S. §37-82-105 provides that if any person unlawfully causes any diminution of or obstructs or interferes with the flow of waters from any natural spring to the injury of any appropriator then that person is liable to the injured party for the amount of the injury.

The person upon whose land seepage waters arise has a prior right to such waters if such waters are capable of being used upon his land (C.R.S. §37-82-102). C.R.S. §37-82-102 allows a landowner a prior right to seepage waters which arise upon his lands. During the summer season it is unlawful to allow a greater quantity of water to run through an irrigation of one's lands (C.R.S. §37-84-108). The declared intent of such legislation is to prevent waste, prevent useless discharge and prohibit the running away of water (The Tongue Creek Orchard Co. v. Town of Orchard City, loc. cit.).

Salvaged Waters--

The courts have been generally cognizant of the fact that water may be lost by numerous natural means, such as evaporation and consumption by vegetation, and, conversely, may be salvaged by engineering improvements. In this regard, Hutchins has noted that:

> Artificial work on the channel may reduce natural losses materially and thus make more water available for use than existed under natural conditions. These increases in stream flow, resulting from artificial improvements, are properly termed 'salvaged waters' (Hutchins, 1942, p. 361).

This concept is affirmed in the case of Pike's Peak Golf Club, Inc. v. Kuiper (455 P.2d 882, 1969).

The right to the use of salvaged water was recognized in a 1932 Colorado case (Leadville Mine Development Company v. Anderson, 91 Colo. 536, 17 P.2d 303, 1932), in which the court held that, when a person through his own efforts increases the flow of water in a natural stream, he is entitled to the use of that water to the extent of the increase. But, to be entitled to such use, free from the call of others, it is not enough for him to show that the flow of water was hastened (flowed more freely); he must also show that the flow of the river was augmented. If all that is done is to stop the wastage of the water, it is then salvaged water and can be claimed but is subject to the call of the other users on the stream.

In the more recent decision of C.F. & I. Steel Corporation v. Rooks (495 P. 1134, Colo. 1972), this position was reaffirmed. In this case the steel company showed that, even though water was taken from the stream by a new diversion, the end result would be an increased return flow to the Arkansas River. In the absence of any contrary evidence from the plaintiff, the court held that the steel company had carried its burden of persuasion that it had actually added to the flow of the stream.

The distinction between salvaged and developed waters was proclaimed by the court in 1975 with the potential effect of hampering more efficient water use. In the Shelton Farms case (Southeastern Colorado Water Conservancy District v. Shelton Farms, Inc., 529 P.2d 1321, 1975), the court stated that salvaged water is water in the river or its tributaries, including the acquifer, which would normally go to waste, but is somehow made available for beneficial use but is subject to call by prior appropriators, whereas developed water is new water not previously a part of the river system and not junior to existing decrees and thus free from call by prior appropriators. Articulating the issue of the case as: "May one who cuts down water-consuming vegetation obtain a decree for an equivalent amount of water for his own beneficial use free from the call of the river?" (Ibid. p. 1323).

The case concerns two parties, one cut down phreatophytes along a river, the other cut down phreatophytes on his land. The court concerned itself with the possible adverse environmental effects of granting a water right for such action that would encourage denuding river banks of trees and shrubs.

In deciding the issue, existing case law was recognized which would deny a water right to one who "merely clears out a channel, lines it with concrete or otherwise hastens the flow of water without adding to existing water" (Ibid., p. 1324, citing 10 cases from 1903 to 1968), but which would grant a decree to one who adds to an existing water supply by importation and capturing flood waters or waters which would never have normally reached the river such as trapped mine waters. The court then went on to say:

> The roots of phreatophytes are like a pump. The trees, which did not have to go to court or seek any right, merely "sucked up" the water from prior appropriators. Appellees now take the water from the trees. Therefore, appellees also are continuing to take from the appropriators, but seek a court decree to approve it. They added nothing new; what was there was merely released and put to a different use. To grant appellees an unconditional water right therefor would be a windfall which cannot be allowed, for thirsty men cannot step into the shoes of a "water thief" (the phreatophytes). Senior appropriators were powerless to move on the land of others and destroy the "thief" - - the trees and phreatophytes - - before they took firm root. They are helpless now to move in and destroy them to fulfill their own decrees. The property (the water) must return from whence it comes - the river - and thereon down the line to those the river feeds in turn (Ibid. p. 1325).

The real concern of the court was that decrees granted for water saved from phreatophyte removal would be senior to all existing water rights, and thus encourage the wholesale planting and harvesting of such plants to create senior water rights. It was also noted that this plant life has a beneficial attribute in preventing soil erosion.

It is not clear from the decision how the court would hold if the water consuming plants were wholly within an irrigation district and along canals, but since the water is measured at the point of diversion from the natural water course, it can be argued any water saved goes to the owner of the rights. The only difference between Shelton Farms, Inc. and this position is that water saved under the latter is distributed in priority according to the decree giving the right to divert in the first place.

Enforcement of Beneficial Use on Waste Concept--The Water Right Determination and Administration Act of 1969 states that it is the policy of the state of Colorado to integrate the appropriation, use and administration of underground water, tributary to a stream with the use of surface water in such as way as to maximize the beneficial use of all of the waters of this state (C.R.S. §37-52-102). Further, an appropriator is limited to a quantity of water which he has used for a beneficial purpose and an appropriative right cannot be enlarged beyond that needed and used for the original undertaking from which the priority was awarded (Ft. Lyons Canal Co. v. Chew, 33 Colo. 392, 81 P.37, 1905).

But in exercising his water right, a senior appropriator is not unconditionally entitled to command the river flow to receive his allocation if his call on the river would be "futile." The 1969 Colorado Water Act states this rule:

> No reduction of any lawful diversion because of the operation of the priority system shall be permitted unless such reduction would increase the amount of water available to and required by water rights having senior priorities (C.R.S. §37-92-102).

The statutes go on to provide authority, direction and criteria for curtailment of diversions by the division engineers and their staff.

> Each division engineer shall order the total or partial discontinuance of any diversion in his division to the extent the water being diverted is not necessary for application to a beneficial use; and he shall also order the total or partial discontinuance of any diversion in his division to the extent the water being diverted is required by persons entitled to use water under water rights having senior priorities, but no such discontinuance shall be ordered unless the diversion is causing or will cause material injury to such water rights having senior priorities. In making his decision as to the discontinuance of a diversion to satisfy senior priorities, the division engineer shall be governed by the following: The materiality of the injury depends on all factors which will determine in each case the amount of water such discontinuance will make available to such senior priorities at the time and place of their need. Such factors include the current and prospective volumes of water in and tributary to the stream from which the diversion is being made; distance and type of stream bed between the diversion points; the various velocities of this water, both surface and underground; the probable duration of the available flow; and the predictable return flow to the affected stream. Each diversion shall be evaluated and administered on the basis of the circumstances relating to it and in accordance with provisions of this article and the court decrees adjudicating and confirming water rights. In the event a discontinuance has been ordered pursuant to the foregoing, and nevertheless such does not cause water to become available to such senior priorities at the time and place of their need, then such discontinuance order shall be rescinded. If a well has been approved as an alternate means of diversion for a water right for which a surface means of diversion is decreed, such well and such surface means must be utilized to the extent feasible and permissible under this article to satisfy said water right before diversions under junior water rights are ordered discontinued.
>
> The state engineer and the division engineers have authority to order any owner or user of a water right to install and maintain at such owner's or user's expense necessary meters, gauges, or other measuring devices and to report at reasonable times to the appropriate division engineer the readings of such meters, gauges, or other measuring devices (C.R.S. §37-92-502(2) and (5)).

Improved irrigation practices could result in decreased return flows to a downstream user. An upstream user could apply his entire appropriation to his land which could eliminate any flows which had been returned directly to the stream. The use of salvaged waters or the re-use of waters could have an adverse effect not only upon downstream users but upon the very quality of the water.

Provisions for Transfer of Water Rights and Diversions--

In Brighton Ditch Co. v. City of Englewood (124 Colo. 366, 237 P.2d 116, 1951), the court held that the right to change a point of diversion is an incident of ownership and is always enforceable so long as the vested rights are not injuriously affected. Thus, if the change will not result in an injury to junior appropriators then the change will be approved. But if the changes would result in stream depletion and injure junior appropriators, the decree authorizing the change should contain conditions to counteract the loss. Transfers should not be denied except where it is impossible to impose reasonable conditions (Farmers Highline Canal and Reservoir Co. v. City of Golden, 129 Colo. 575, 272 P.2d 629, 1954). The court went on to say:

> . . . What conditions and limitations should be imposed depends upon the facts and surrounding circumstances in each particular instance. . . It is the purpose of the law, both statutory and by decision, to protect all appropriations and holders of water rights; to this end all elements of loss to the stream by virtue of the proposed change should be considered and accounted for; and thereupon such appropriate provisions of limitation inserted in the decree as the facts would seem to warrant. . . (Ibid. 129 Colo. 575 at 586).

Water rights may be sold, or transferred freely and a change in ownership by the sale of a water right is subject to the sale laws as sales, conveyancing and recording. Change of water right means:

> A change in the type, place, or time of use, a change in the point of diversion, a change from a fixed point of diversion to alternate or supplemental points of diversion to a fixed point of diversion, a change in the means of diversion, a change in the place of storage, a change from direct application to storage and subsequent application, a change from storage and subsequent application to direct application, a change from a fixed place of storage to alternate places of storage, a change from alternate places of storage to a fixed place of storage, or any combination of such changes (C.R.S. §37-92-103 (5)).

In the conveyance of water rights, the same formalities shall be observed and complied with as in the conveyance of real estate (C.R.S. §38-30-102). Whether a deed to land conveys the water rights depends upon the intent of the grantor (Kinoshita v. North Denver Bank, 501 P.2d 1337, Colo. 1972). This is distinct from the sale of water itself. Under case law an appropriator can not lend, rent or sell excess water to others (Enlarged Southside Irrigation Ditch Co. v. John's Flood Ditch Co., 116 Colo. 580, 183 P.2d 552, 1947, reaffirmed in Farmers Highline Canal & Reservoir Co. v. City of Golden, 129 Colo. 575, 272, P.2d 629, 1954).

In Colorado, a person or company has the right to "divert water from one public stream and turn it into another public stream," and may take out the same amount of water, given the allowance for loss (C.R.S. §37-83-101). Any person or company transferring water is required to construct and maintain measuring flumes or weirs at the point where the water is finally diverted for use from the public stream (C.R.S. §37-83-102).

The statutes go on to state that:

> When the rights of others are not injured thereby, it shall be lawful for the owner of a reservoir to deliver stored water into a ditch entitled to water or into the public stream to supply appropriations from said stream, and take in exchange therefor from the public stream higher up an equal amount of water, less a reasonable deduction for loss . . . (C.R.S. §37-83-104).

The statutes further hold that:

> It shall be lawful for the owners of ditches and water rights taking water from the same stream, to exchange with, and ban to, each other, for a limited time, the water to which each may be entitled, for the purpose of saving crops or using the water in a more economical manner. . . (C.R.S. §37-83-105).

The general rule with respect to the exchange of water is that if it will create a benefit and no injury is caused, then the exchange will be allowed (King v. Ackroyd, 28 Colo. 488, 66 P. 906, 1901).

3.2.7. Waste Water Disposal and Drainage

A lower proprietor is not entitled to recover damages for the natural discharge of water upon his land when the water was sent down in a manner no different than it was formerly (Boulder v. Boulder, 73 Colo. 426, 216 P.553, 1923). Colorado adheres to the civil law rule which holds that lower land is burdened with a natural easement of drainage in favor of higher land.

However, in Olney Springs Drainage District v. Auckland (83 Colo. 510, 267 P.605, 1928), the court held that a landowner cannot drain water over another's land without his consent.

3.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

3.3.1 State Water Agencies

Responsibility for water administration and control is divided between (1) the State Engineer, who is the executive director of the Division of Water Resources which is composed of seven Division Engineers and Water Commissioners, a Ground Water Commission, an Irrigation District Commission and a Board of Examiners of Water Well and Pump Installation Contractors; (2) the Colorado Water Conservation Board; (3) the Colorado Water Pollution Control Commission; and (4) the judiciary composed of one district court judge who is designated as a water judge for each of the seven water divisions.

The Division of Water Resources, headed by the State Engineer, is made up of: Water Operations, Engineering and Hearing or Legal. The Water Operations Section administers the use and distribution of the state's surface and ground water. The Engineering Section gives technical support for administration in the fields of records and files, hydrography, hydrology and dams and reservoirs. The Hearing or Legal Section is responsible for advising and coordinating legal matters in water law conflicts.

The principal responsibility of the State Engineer in Colorado "is to administer the laws . . . pertaining to water rights and, at the request of the Governor, to render service and give counsel to other agencies of the state" (C.R.S. §37-80-103). The Colorado Revised Statutes hold that "the Governor shall appoint a State Engineer, pursuant to Article XII, Section 13, of the constitution of the state of Colorado" (C.R.S. §37-80-101). The statutes go on to note that:

> The Civil Service Commission shall require that the State Engineer shall be a person qualified to be a registered engineer in Colorado having the background of knowledge and experience in areas essential to the proper discharge of his duties and functions (C.R.S. §37-80-113(1) (a)).

The State Engineer reports to the Executive Director of the Department of Natural Resources and the duties of the office are spelled out in the statutes as follows:

> (1) The State Engineer shall be the executive officer in charge of supervising the work of all division engineers . . . He has executive responsibility and authority with respect to:
> (a) Discharge of the obligations of the state of Colorado imposed by compact or judicial order on the office of the state engineer;
> (b) Securing and implementing legal opinions and assistance regarding the work within his jurisdiction;
> (c) Coordinating the work of the division of water resources with other departments of the state government. . . ;
> (d) The supervision of employees in the office of the division of water resources . . . ;
> (e) Construction contracts, professional and technical consultants and other contracts related to the operation of the division of water resources;
> (f) The keeping and preparation of records and investigations as related to carrying out the functions of the division of water resources, including water well licensing;
> (g) Rule making for the division of water resources;
> (h) General supervisory control over measurement, record keeping, and distribution of the public waters of the state;
> (i) Collection and distribution of data on snowfall and prediction of probable run-off therefrom;
>
> (2) The State Engineer shall have authority to delegate any other person the obligation to discharge one or more portions of the duties imposed upon him. . .
>
> (6) (a) The State Engineer and those under his supervision shall be subject to the direction of the executive director of the department of natural resources with respect to those matters concerning the division of water resources which require coordination with other branches of the department of natural resources.
>
> (7) Under the control and direction of the State Engineer, and in cooperation with the Colorado water conservation board, there shall be a water supply section, which shall have the duty to collect and study data and distribute such information on the water supplies, both surface and ground water, of the state of Colorado in order to make a more efficient administration of the uses thereof (C.R.S. §37-80-102(1-8)).

The State Engineer is a member of the Western States Water Council, Board of Examiners, Water Well and Pump Installation Contractors, Colorado Ground Water Commission, Colorado Water Conservation Board and Irrigation District Commission. He has also been appointed the Commissioner of the Rio Grande River, Republican River, La Plata River, South Platte River, and Costilla Creek Compacts.

To assist the Office of the State Engineer in administrating the state's waters, seven water divisions were created for the 9 drainage basins in the state in 1969; thereby eliminating the previous 70 districts. Water distribution and administration of laws at division and local levels are carried out by a division engineer and his staff. The former is appointed by the State Engineer (C.R.S. §37-92-201 and 202

The Colorado Water Conservation Board was established to aid in the protection and development of the waters of the state for the benefit of the present and future inhabitants of the state (C.R.S. §37-60-102). The Board consists of 13 members. The Natural Resources Coordinator, Attorney General, State Engineer, and Director of said Board are ex-officio members (C.R.S. §37-60-104). The remaining members are appointed by the Governor for terms of three years.

According to the statutes:

> It shall be the duty of the Board to promote the conservation of the waters of the state of Colorado in order to secure the greatest utilization of such waters and the utmost prevention of floods; and in particular, and without limiting the general character of this section, the Board shall have power and it shall be its duty:
>
> 1. to foster and encourage irrigation districts, public irrigation districts, water users' associations, conservancy districts, drainage districts, mutual reservoir companies, mutual irrigation companies, grazing districts, and any other agencies which may be formed under the laws of the state of Colorado . . .;
>
> 2. to assist any such agencies in their financing, but not to lend or pledge the credit or faith of the state of Colorado in aid thereof, or to attempt to make the state responsible for any of the debts, contracts, obligations, or liabilities thereof;

3. to devise and formulate methods, means, and plans for bringing about the greater utilization of the waters of the state and the prevention of flood damages therefrom . . . ;

4. to gather data and information looking toward the greater utilization of the waters of the state and the prevention of floods and for this purpose to make investigations and surveys;

5. to cooperate with the United States and the agencies thereof, and the other states for the purpose of bringing about the greater utilization of the waters of the state of Colorado and the prevention of flood damage;

6. to cooperate with the United States . . . in making of preliminary surveys, and sharing the expense thereof, when necessary respecting the engineering and economic feasibility of any proposed water conservation or flood control project within the state of Colorado . . . ;

7. to formulate and prepare drafts of legislation, state and federal, designed to assist in securing greater beneficial use and utilization of the waters of the state and protection from flood damages;

8. to investigate the plans, purposes and activities of other states, and of the federal government, which might affect the interstate waters of Colorado;

9. to confer with and appear before the officers, representatives, boards . . . or other agencies of other states, or of the federal government, for the purpose of protecting and asserting the authority, interests and rights of the state of Colorado and its citizens over, in, and to the waters of the interstate streams in this state;

10. to acquire . . . any real property or interest therein with respect to any project specifically authorized by the United States Congress for the prevention or control of floods, including but not limited to easements and rights of way for ingress into and egress from such project, with the power in either event to lease such lands or interest therein to agencies of the federal government or to the state or any agency of political subdivision thereof for the construction, operation, or maintenance of flood control and prevention facilities;

11. in general, to take such action and have such powers as may be incidental to the foregoing specific provisions and to the general purposes of this article;

12. to enter into contracts as hereinafter provided for the construction of conservation projects which, as authorized by the general assembly under procedures set forth in Section 37-60-122, will conserve and utilize for the best advantage of the people of this state, the water and power resources of the state, including projects beyond the boundaries of the state of Colorado located on interstate waters when the benefit of such project accrues to the citizens of the state of Colorado, upon application under such rules and regulations as the Board shall establish;

13. to file applications in the name of the Department of Natural Resources for the appropriation of water;

14. to take all action necessary to acquire or perfect water rights for projects sponsored by the Board; and

15. to sell or otherwise dispose of property owned by the Board, in the name of the state of Colorado, as a result of expenditure from the Water Conservation Board Construction Fund in such manner as to be most advantageous to the state (C.R.S. §37-60-106(1-16)).

The Colorado Conservation Board has been directed to make, or cause to be made, a continuous study of the water resources of the state of Colorado. It shall also carry on a continuous study of the present and potential uses thereof to the full extent necessary to a unified and harmonious development of all waters for beneficial use in Colorado to the fullest extent possible under the law, including the law created by compacts affecting the use of said water (C.R.S. §37-60-115).

The state of Colorado has assented to the provisions of the "Water Resources Planning Act," approved by the U.S. Congress on July 22, 1965 (C.R.S. §37-60-118(1)). In this regard, the Colorado Water Board was directed to conduct and establish a comprehensive water planning program, as defined in Title III of the above act, in conformity with such rules and regulations as may be promulgated by the Water Resources Council pursuant to said act.[7]

The Colorado Water Board is authorized to make available for use to, or enter into contracts with, private organizations or state agencies any water or power conserved on state owned or controlled water projects (C.R.S. §37-60-119). The Board is further empowered to enter into contracts which are "necessary for the maintenance and continued operation of such projects" (C.R.S. §37-60-120).

3.3.1 Judicial Bodies

As noted above, the Water Right Determination and Administration Act of 1969 (C.R.S. §37-92-101 et seq.) established seven water divisions in Colorado (C.R.S. §37-92-201). The State Engineer appoints one Division Engineer for each district (C.R.S. §37-92-202). The Supreme Court of Colorado was required to designate a Water Judge for each division to hear all water matters in the division (C.R.S. §37-92-203(2)). The 1969 Water Right Determination and Administration Act gave jurisdiction of all water matters to the water judges. No judge except a water judge can act on matters relating to water. Water matters include adjudication of claims, matters of beneficial application, priorities of appropriation, enforcement of State or division engineer orders and the validity of State Engineers' rules and regulations (*Baumgartner v. Stremel*, 496 F. 2d 705 Colo., 1972, *Kuiper v. Owners Conservation Ass'n*, 490 P.2d 268, Colo. 1971).

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[7] Colorado Water Conservation Board and the Bureau of Reclamation, Colo. State Water Plan, Phase I--Appraisals of Present Conditions and Phase II-- Legal and Institutional Consideration and Phase III--Plans for Development, Denver, 1974.

Other matters such as the way in which irrigation water is allowed to run off the land or a suit to enjoin the use of water in a designated ground water basin are administered by the Colorado Ground Water Commission and suit may be brought in the district court which has jurisdiction (Larrick v. District Court, 493 P.2d 647, Colo. 1972).

Each judge is directed to appoint such referees as may be needed (C.R.S. §37-92-203(4)), and the referees are required to possess the training and experience to enable them to render expert opinions and decisions on water matters (C.R.S. §37-92-203 (6)).

The duties of the referee are as follows:

> The referee in each division shall in the first instance have the authority and duty to rule upon determinations of water rights and conditional water rights and the amount and priority thereof, determinations with respect to charges of water rights, approvals of reasonable diligence in the development of appropriations under conditional water rights, and determinations of abandonment of water rights or conditional water rights; and he may include in any ruling for a determination of right of conditional water right any use or combination of uses, any diversion or combination of points or methods of diversion and place or alternate places of storage, and may approve any charge of water right as defined in this article (C.R.S. §37-92-301(2)).

The referee is an aid to the court and his findings, though not absolutely binding on the court, guide the inquiry and affect the result (In Re Water District No. 38, Irrigation Division No. 6, 520 P.2d 589, Colo. 1974). Where a district judge has made findings, the power of the water referee to submit suggested contradictory findings is limited by the requirement that there be evidence to support the action of the referee. He may not lawfully make findings on the identical evidence used by the Water Judge, to contradict and overturn the court's decision without having received additional evidence.

Additionally, under the Act, each Water Division Office has a Water Clerk (C.R.S. §37-92-204(1a)). His duties are to maintain records related to appropriations, determinations of water rights, plans for augmentation, abandonment of water rights and conditional water rights, and the records of all proceedings of the Water Judge (C.R.S. §37-92-204(2)).

3.3.3 Water Users and Their Organizational

Individuals--
The constitution and laws of Colorado declare all waters of the State to be public property, dedicated to use by appropriation. In setting out the substantive and procedural components of the law to be followed in appropriating the water, the statutes define person as "an individual, a partnership, a corporation, a municipality, the State of Colorado, the United States, or any other legal entity, public or private" (C.R.S. §37-92-103 (8)). The rights and duties of individuals holding water rights does not differ from that of irrigation companies or other users to the extent that water will be distributed by the state according to priority of the right, the water right can be protected against impairment by others and the individual user must exercise his water right so as not to waste water nor cause injury to other users through nuisance, neligence, trespass or interference with their rights.

Companies--
Where it was no longer possible or desirable for individuals to construct and operate their own diversion and delivery works, they began to form cooperative relationships which evolved into several distinct categories of private and quasi-public companies.

The most common in Colorado is the mutual irrigation company. Mutual "water companies" are private organizations which may be incorporated or unincorporated, organized for the express purpose of furnishing water to stockholders or to persons with vested rights in water (Farmers Water Development Co. v. Barrett, 151 Colo. 140, 376 P.2d 693, 1962). In 1969, there were a total of 1,752 mutual companies of which only 546 were incorporated (1969 Census of Agriculture, Vol IV). These companies are non-profit entities that can levy assessments for operation and maintenance, but not charge for the water itself (Zoller v. Mail Creek Ditch Co., 498 P.2d 1169, Colo. App. 1972).

The water rights held by the company are owned by the shareholders (Jacobucci v. Dist. Ct. in and for County of Jefferson, 541 P.2d 667, Colo. 1975). A mutual company can transfer, sell or lease the rights to water that it holds, but the shareholders can place restrictions on water deliveries in the companies' by-laws (Model Land & Irr. Co. v. Madsen, 87 Colo. 166, 285 P.1100, 1930).

In many areas through Colorado, "carrier companies" are formed to deliver water from the "mutual company" to water users not within the reach of the mutual's delivery system. These companies assess their members fees for operation and maintenance and may or may not be organized for profit. Often ownership of shares in a carrier company are restricted to landowners adjacent to their ditches.

The second major water company is the commercial entity, organized for profit, and either owning its own water rights or delivering water for other water right holders. These entities may be classified as a public utility and subject to a higher degree of care and trust in the delivery of water to consumers (Putnam Ditch Co. v. Bijou Irr. Co., 108 Colo. 124, 114 P.2d 284, Colo. 1941).

Irrigation Districts--
Initially, water development in the West was undertaken by private parties acting individually or collectively in the form of irrigation companies or associations (described in the next section). Because of the private nature of this early development, expansion depended upon personal initiative and capital. Shortly before the turn of the century, California adopted the Wright Act of 1887 allowing for the formation of public entities to plan, construct, and operate more complex and extensive water projects.

The success of this approach and the emergence of the federal reclamation activities in the West led Colorado to adopt the Irrigation District Law of

1905 (C.R.S. §§37-41-101 to 160). This law states that a majority of landowners may petition to form a district to provide irrigation and drainage to such lands and may also cooperate with the federal government for construction, operation, and maintenance of irrigation works. The petition is filed with the County Commissioners and, after published notice and a hearing, the district can be formed if a majority of landowners approve. Once organized, the district can acquire water, water rights, and necessary properties to carry out its purposes; it can sell bonds and levy assessments against irrigated lands in the district boundaries and allocate water during periods of drought in the best interest of all parties.

The Irrigation District Law of 1921 was enacted to provide for the reclamation of lands and development of new irrigation systems (C.R.S. §§37-42-101 to 140). A petition from a majority of landowners is submitted to the County Commissioners. The Commissioners transmit the proposal to the State Engineer who must prepare a feasibility study and make his recommendation to the Commissioners. If approved, a board of directors is elected. The district has broad powers to acquire properties and operate facilities but must adopt a definite plan to carry out the purposes of the district. It also has authority to lease surplus waters (C.R.S. §§37-42-113, 117 and 135, respectively).

In 1935, an act was passed which expanded and clarified the powers and duties of irrigation districts (C.R.S.§§37-43-101 to 189). This law provides, among other rights, that a district can undertake drainage activities, have preferred rights to seepage and waste waters within district boundaries, and refuse water delivery to land upon which assessments are delinquent (C.R.S. §§37-43-122 123, and 143, respectively).

The board of directors of such a district are given the power to distribute available water upon certain or alternate days to varying localities in the event of a shortage (C.R.S. §37-41-130).

Conservation and Conservancy Districts--Distinct and independent from the Colorado Water Conservation Board are three water conservation districts--Colorado River Water Conservation District, Southwestern Water Conservation District, and Rio Grande Water Conservation District (Respectively, C.R.S. §37-46-101 to 132, §37-47-101 to 132, and §37-48-101 to 122). These districts promote, plan, and develop water resource projects; conduct necessary background studies; and represent the interests of the residents in compact matters. In addition, they work closely with the Water Conservation Board. They are primarily project planning and development entities and leave the construction and operation of projects to the water conservancy districts.

At first glance, Colorado laws on conservancy districts may appear repetitious. The laws contain two specific articles relating to formation of conservancy districts. The first--set out in Title 37, Article 1, and entitled the Conservancy Law of Colorado--authorizes the formation of districts to prevent the loss of life and properties from floods and other uncontrolled waters. Districts can be organized for any of the following purposes: (1) preventing floods; (2) regulation of stream channels or stream flows; (3) diverting, controlling or eliminating water courses; (4) protection of public or private property from inundation (this is accompanied by broad powers to change the course of any stream by any means); and (5) conservation, development, utilization, and disposal of water for agricultural, municipal, and industrial uses when desirable (C.R.S. §37-2-101).

To establish such a district, it is necessary to file a petition setting forth the name of the proposed district, that property within the boundaries of the proposed district that will be benefited by the establishment of the district, a general description of the purpose of the contemplated improvement, and a description of the property to be included within the district if it is established (C.R.S. §37-2-102(2)). This petition must be filed in the Office of the Clerk of the Court, which is vested with jurisdiction in a county in which all or part of the lands embraced in the proposed district are situated. The petition must be signed by either 200 county landowners or by a majority of the owners of land located within the limits of the territory of the proposed district (C.R.S. §37-2-102(1)).

The statute provides for hearings on the petition after proper notice is given by publication. If no objections have been filed or if they have been but have proved without merit, the District shall be organized by order of the District Court. (C.R.S. §37-2-105(7)). The order of the court is final with no appeal permitted (C.R.S. §37-2-105 (10)).

Once the district is organized and the board of directors has been appointed by the court, the directors are authorized to alter, straighten, widen, deepen, or change the course of any water or watercourse. They may fill any abandoned watercourses and may construct ditches, canals, sewers, dikes, or any other works deemed necessary to protect, operate, or maintain the works in or out of said district. They are also given broad powers to construct or renovate bridges, highways, and rights-of-way or to condemn and purchase land for these purposes. They may not, however, regulate or administer water rights nor damage or take such rights without just compensation (C.R.S. §37-3-103(1) and (2)).

The second type of conservancy district is authorized under the Water Conservancy Act of 1937 (C.R.S. §§37-45-101 to 152). The need arose to provide for the formation of an irrigation-oriented water entity, at a level higher than the irrigation district, to plan and construct water projects encompassing a greater area with a basin and to provide a tax base including all lands within their boundaries, not just the irrigated lands. The water conservancy district concept was adapted to provide for the conservation of water use in Colorado for the direct and indirect benefit of the public, industries, municipalities, and irrigation water users by providing adequate and timely water supplies and stabilizing the flow of streams. Further, the districts are to strive for the highest duty of water allocated under compact and control to insure the beneficial use of all unappropriated water to a direct or supplemental use by all beneficial users (C.R.S. §37-45-101).

As with the flood control conservancy district, the formation of water (development and management) conservancy districts follow statutory procedures in the appropriate district court (C.R.S. §37-45-108). These procedures are too complex for simple summation so interested parties are referred to the statutes to determine the extent of valuation of land, minimum number or percentage of landowners needed to sign the petition, and the contents of the petition (C.R.S. §37-45-109). Once a district has been approved and organized, the district court will appoint a board of directors of not more than 15 residents from counties situated in the new district (C.R.S. §37-45-114). The districts have these powers, among others: to acquire and sell; lease or otherwise dispose of water, waterworks, and water rights; construct and operate facilities; exercise eminent domain powers to condemn private property for public use; contract with the federal government for construction, operation, and maintenance of project facilities; and fix water rates for non-project water users (C.R.S. §37-45-118). Districts also have the power to make special assessments, levy an ad valorem tax on all property within the district, and issue bonds. There are 36 such districts, organized under Article 45 and currently planning or operating water development and utilization projects.

River Basin Authorities--
Colorado enacted legislation to permit the formation of river basin authorities for the purpose of stabilizing ground and surface water supplies and encouraging the maximum utilization of water by planned management (C.R.S. §37-93-101). The powers of specific importance to irrigation efficiency are:

> To establish standards for the proper utilization of water used within the territorial limits of the authority the violation of which standards will be prima facie evidence of waste. For the purposes of this article, the following definitions will govern the authorities in the establishment of such standards:
>
> 1. Full water supply. Full water supply is one which is adequate but not surplus to accomplish the purpose for which the diversion was lawfully made.
>
> 2. Full water supply - agricultural. A full water supply at the farm headgate is that quantity and quality of irrigation water in addition to natural precipitation which is adequate when applied consistently with good farming practices to supply crop consumptive uses and soil leaching requirements plus reasonable farm losses. Such supply will vary from year to year and throughout each year as influenced by use patterns and climatic conditions and will be dependent upon type of crop, soil, and topographic conditions. Such a supply, if converted to diversion requirements, must include reasonable transportation losses, and storage losses where applicable, between the point of diversion and the farm headgate.
>
> 3. Historic usage. The historic usage is that quantity of water diverted or stored and used under any water right or combination of water rights as reflected by accurate records, otherwise as estimated by recognized formulas. Such usage may be more or less than a full water supply.
>
> 4. Waste. Waste is causing or permitting the consumption or application of water in excess of that required to accomplish the purpose for which the water is diverted, or permitting water to escape from ditches, canals, or other works, in excess of reasonable loss.

To date, no such entities have been formed. Water users view the basin authority as another taxing entity. As pressure mounts upon present water supplies, however, the role of such organizations may be brought actively upon the scene.

3.4 POLLUTION CONTROL

Colorado followed federal action in updating its laws and adopted the Water Quality Control Act of 1973.[8] The Act was passed in recognition of the fact that pollution of state waters is a menace to public health, a nuisance to the public, harmful to wildlife and aquatic life, detrimental to beneficial uses of waters of the state, and in close interaction with water pollution problems in adjoining states (C.R.S. §25-8-102(1)).

The Act was adopted pursuant to the declared public policy to:

> . . . conserve state waters and to protect, maintain, and improve the quality thereof for public water supplies, for protection and propagation of wildlife and aquatic life, and for domestic, agricultural, industrial, recreational, and other beneficial uses (C.R.S. §25-8-102(2)).

Regarding the matters of pollution, general policy further provided:

> . . . that no pollutant be released into any state waters without first receiving treatment or other corrective action necessary to protect the legitimate and beneficial uses of such waters and to prevent, abate and control new or existing water pollution and to cooperate with other states and the federal government in achieving these objectives (C.R.S. §25-8-102(2)).

Among the key requirements of the Act are (1) creation of a Water Quality Control Commission (C.R.S. §25-8-201+); (2) a plan to classify state waters (C.R.S. §25-8-203+); (3) standards by which to describe water quality (C.R.S. §25-8-204+); (4) a method for promulgating water quality control regulations (C.R.S. §25-8-205+); (5) a method for reviewing the adequacy of individual sewage disposal systems (C.R.S. §25-8-206+); (6) administrative machinery to supervise loans and grants and to coordinate with other state bodies (C.R.S. §25-8-207+); (7) a chain of command for administering and enforcing water quality control programs (C.R.S. §25-8-301+); (8) a system for administratively proceeding to effect the regulations of the commission (C.R.S. §25-8-401); (9) a permit system for the discharge of pollutants (C.R.S. §25-8-501+); and (10) enforcement provisions (C.R.S. §25-8-601+).

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[8] G. E. Radosevich and P. Allen, Colorado Water Quality Control and Administration, Laws and Regulations, E.R.C. Information Series 12, Center for Economic Education, Colorado State University, 1974, and supplements, for a current compilation of water quality control laws and Commission regulations.

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APPENDIX A REPORT 4

IDAHO

4.1 HISTORICAL BACKGROUND

Like many of Western states, Idaho's economy is largely dependent upon agriculture. The state, with 52,910,000 acres of land, is fortunate to have significant quantities of surface and ground water. Annual precipitation ranges from 40 to 50 inches in the Clearwater, Payette, Boise, Salmon and Priest River Basins to + or -10 inches in Custer County, for an annual average precipitation of 18 inches. The mean annual runoff amounts to 4,543,000 acre feet (State Water Plan Part One, 1974, p. 5.).

Agriculture, the state's largest employer, is scattered throughout six hydrologic basins. However, the majority of the 4,038,700 irrigated acres in the state (Irrigation Journal, 1975) lie within a 50-mile-wide belt along the Snake River and its tributaries around the Pocatello-Idaho Falls area. Approximately 15 to 20 million acre-feet of water per year is diverted for irrigation in the state (Interim State Water Plan, 1972). In addition, there is approximately 3,200,000 non-irrigated acres of land under production (Statewide Water Quality Management Planning Report, 1976, p. 73).

With natural conditions conducive to an agrarian life, irrigation began to take place in the state nearly a century ago along the Snake River. Farming increased markedly in the late 1800's and early 1900's and again in the mid-1900's under the Federal Reclamations Act programs. As a result of the large irrigation projects, in 1972 Idaho ranked second only to California among the Western States for irrigated acreage (Interim Report, 1972, p. 83).

Idaho adopted the law of prior appropriation of water as the governing law of water use early in its history.[1] In 1881, statutes were enacted which provided for appropriation of water and posting notice at the diversion site (Idaho Laws, 1881, p. 267) and distribution of water by water masters (Idaho Laws, 1881, p. 273). This practice of allocating water and protecting the user was upheld by the territorial Supreme Court in 1888 (Malad Valley Irrigation Co. v. Campbell, 2 Idaho 411, 18 P. 52, 1888). Following the court's decision, the next year, when Idaho was granted statehood, the constitution included six sections incorporating the appropriation doctrine into the highest law of the State (Ida. Constitution Art. 15, sec. 1-6).

The riparian doctrine was repudiated to the extent that any conflict occurred between the appropriation and riparian doctrines (Drake v. Earhart, 2 Idaho 750, 23 P. 541, 1890; Jones v. McIntire, 60 Idaho 338, 91 P. 2d 373 and Maher v. Gentry, 67 Idaho 559, 186 P.2d 870, 1947). There is, however, the right of a riparian landowner to protect his land from stream overflow (Fischer v. Davis, 19 Idaho 493, 116 P. 412, 1911). This right does not permit a landowner to place objects in the stream with the intent of diverting it if the result is to divert the stream onto the land of another (Chandler v. Drainage District No. 2, 68 Idaho 376, 187 P.2d 971, 1947). Riparian landowners, whose water claim is inferior to that of an appropriator, hold superior rights to any right claimed by a stranger or intermeddler (Hutchinson v. Watson Slough Ditch Co., 16 Idaho 493, 101 P. 1059, 1909).

A recent case has addressed the relationship between appropriators and riparian landowners (Weeks v. McKay, 85 Idaho 617, 382 P.2d 788, 1963). This case involved a downstream appropriator who sought to enjoin the maintenance of a dam by a riparian owner. The riparian owner appealed from a decree granting the injunction. The Supreme Court of Idaho modified the lower court's decree while insuring that the appropriative right would not be impaired. The court also held that to protect the upstream owner's riparian right (to maintain the level of his lake against encroachment by an appropriator) the riparian owner need not release any more water through a dam than would naturally and normally flow through the lake outlet. This was the case even though the amount of water flowing from the lake was less than the quantity to which the appropriator was entitled. Thus, the dam of the riparian had made the appropriator's right possible for the appropriator to get his entire supply, but he was still under no obligation to supply that right to any extent greater than the natural flow of the stream.

Idaho's water laws were enacted and amended several times until 1903 when a comprehensive statute was adopted that, among other changes, instituted the current permit system for acquiring water rights (I.C. § 42-101 et seq.). Since 1903, this basic law has been amended numerous times, particularly in 1951 and 1953 when ground water allocations and administration were specifically addressed. Then in 1964, the constitution was amended providing for the creation of a state water resources agency (Ida. Constitution, Art. 15, Sec. 7) followed one year later by the 38th Legislature establishing the Idaho Water Resources Board and its staff agency, the Idaho Department of Water Administration. In an effort to consolidate all state responsibilities for water resources except water quality control into one agency, the 1974 42nd Legislature designated the new agency as the Idaho Department of Water Resources. The functions of the Department of Water Administration and the Water Resources Board were transferred to the Department of Water Resources. The eight-member board still exists, but functions within the new department.

One of the key functions of the water resources agency as required by the 1964 constitutional amendment was to formulate and implement a state water plan. An Interim State Water Plan was released in 1972, followed by an expansion of the water plan objectives in 1974 (State Water Plan--Part One) and an application of the planning process to the Snake River Basins in 1976 (State Water Plan, Part II: Summary Report of Conclusions and Recommendations and Technical and Support Information Report, both dated March 1976). The objectives significant to this examination of state water laws are:

1) application of a broader definition of the beneficial use of water to include both consumptive and non-consumptive uses,
2) maintenance and enhancement of environmental quality, i.e., water quality,
3) inclusion of effects from water projects and programs on erosion and deposition of soil,
4) maintenance of orderly growth in agricultural production,
5) protection of natural resources and community environment of Indian reservations,
6) recognition of equal consideration to fish and wildlife needs for the state water resources, and

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[1] For an expanded background of water law in Idaho, see Hutchins, W. A., "Idaho Law of Water Rights," Idaho Law Review, Vol. 5, Fall 1968, No. 1, pp. 8-11.

7) opposition to interstate water transfers and diversions from Idaho (State Water Plan--Part One: the Objectives, 1974).

4.2 SUBSTANTIVE WATER LAW

4.2.1 Property Right in Water

Idaho legislation provides that all waters of the state flowing in natural channels, including natural springs and lakes, are the property of the state and that it is the duty of the state to supervise the appropriation and allotment to water users (I.C. § 42-101). All ground waters are also property of the state (I.C. § 42-226). The ownership of the State in the water resources is not a proprietary one, but rather a trustee role to regulate the appropriation and beneficial use for the common interest of the public (Walbridge v. Robinson, 22 Idaho 236, 125 p. 812, 1912).

There are certain waters which are considered private waters and beyond the authority of the state agency to allocate, however. These waters include any lake less than five acres, pond, pool, or spring located wholly within private property (I.C. § 42-212).

Both the legislature and the courts have declared the right to use water a real property right (I.C. § 55-101; Boise City In. and Land Co. v. Stewart, 10 Idaho 38, 77 P. 25, 1904; In Re Robinson, 61 Idaho 462, 103 P.2d 693, 1940; Anderson v. Cummings, 81 Idaho 327, 340 P.2d 1111, 1959). This right is a "valuable" private property right, subject to ownership and disposition by the owner (Payette Lakes Protective Ass'n v. Lake Res. Co., 68 Idaho 111, 189 P.2d 1009, 1948; Reno v. Richards, 32 Idaho 1, 178 P. 81, 1918). A right holder can sell, lease or transfer his right. And since it is a real property right it may be protected by injunction, mandamus, or prohibition when threatened by irreparable injury (Olson v. Bedke, 555 P.2d 156, 1976).

An action to quiet title to an appropriative right and to establish the right to divert and use the water is in the nature of an action to quiet title to real estate. One must rely upon the strength of his own title to establish a claimed right, not upon his adversary's weakness (Harris v. Chapman, 51 Idaho 283, 5 P.2d 733, 1931).

The nature of the water right and protection afforded a water right holder is set out in the State constitution as basic politics. Section 1 of Article XV states that the use of water now or hereafter appropriated under the laws of the state is declared to be a public use subject to the regulation and control of the state. Also, the use of any lands for water works facilities and conveyance is a public use (Ida. Const. Art 1, Sec. 14x). The right to divert unappropriated water of any natural stream to beneficial uses will not be denied, but the state may regulate and limit the use of water for power purposes (Ida. Const. Art. 15, Sec. 3). Once a water right for agricultural purposes has been acquired, under contract of sale, rental or distribution, the continued annual use is guaranteed except by consent of the owner or failure to comply with terms and conditions presented by law (Ibid., Sec. 4). Priority in time gives priority in right under normal circumstances for water users receiving water for agricultural purposes under a sale, rental or distribution of appropriated water, but in times of scarcity, the legislature can reasonably apportion the supply among the various users or settlements (Ibid., Sec. 5). Idaho has one other important constitutional provision which demonstrates the intent to prevent unreasonable profits or imposition of excessive costs from sale or rental of waters. Section 6, Article XV directs the legislature to provide the manner of establishing reasonable rates for selling or renting water.

A water right gives the appropriator the right to have the water which he has appropriated available at his point of diversion which extends to quality as well as quantity and reaches upstream to tributary sources which supply the right (Valley Irrigation Co. v. Campbell, 2 Idaho 411, 18 P. 52, 1888). The right which an appropriator acquires does not extend to the corpus of the water while it is in a neutral watercourse or public source of supply (Albrethsen v. Wood River Land Co., 40 Idaho 49, 231 P. 418, 1924).

Water flowing in a natural stream is not subject to private ownership. The nature of the right is to divert water from a public source for the purpose of applying the water to a beneficial use (Idaho Code, 42-101. See also Coulson v. Aberdeen-Springfield Canal Co., 39 Idaho 320, 227 P. 29, 1924; Washington County Irrigation District v. Talbay, 55 Idaho 382, 43 P.2d 943, 1935). The right to use water is a usufructuary right, i.e., the right of enjoying a thing, the property of which is vested in another (Sauve v. Abbott, 19 Fed. 2d 619, D. Idaho 1927). Coupled with every right is a corresponding duty. Used in a context relating to water law, the duty is to use the water beneficially or without waste. The term "usufructuary" must be limited by defining one's corresponding duty to the water. The word "duty" is the correlative of a right. Thus, wherever there exists a right in any person, there also rests a corresponding duty upon some other person or upon all persons generally (Black's Law Dictionary, 4th Edition). A user cannot take more water than the quantity which is specified in his permit and is limited by the beneficial use requirement (I.C. §42-220).

4.2.2 Acquisition of Right

General--
Before 1971 there were two methods to acquire an appropriative right, the constitutional method which required diversion and application of water to a beneficial use (Sand Point Water and Light Co. v. Panhandle Developments Co., 11 Idaho 405, 83 P. 347, 1905) and the statutory method. The constitutional method derived from the Idaho constitution, which declares that the right to appropriate the unappropriated water from a stream shall never be denied (Idaho Const. Art. XV, Sec. 3). Thus, the appropriation was complete upon the application of the water to a beneficial use and the priority dated from the time the water was actually placed to a beneficial use (Crane Falls Power and Irrigation Co. v. Snake Irr. Co., 24 Idaho 63, 133 P. 655, 1913).

In 1971, legislation was enacted which provided for an exclusive method for initiating a water right. Under this method, the appropriator must obtain approval from the director of the Department of Water Administration for his application to appropriate (I.C. § 42-202). The appropriation must be for some useful or beneficial purpose and once the use for this purpose ceases, so does the right (I.C. § 42-104). But, in a contest between a water user holding a permit under the statutory method, and one claiming a right under the constitutional method, the latter must bear the burden of proving his diversion occurred prior to the permit issued by the State, or else his right would be junior to the permit (Peck v. Sharrow, 531 P.2d 1157, 1975).

The water user must file an application to appropriate with the director. If the appropriation is for irrigation the right is limited to one cubic foot per second for each 50 acres of land or no more than 5 acre-feet per acre per year (I.C. § 42-202), unless the director is satisfied that a greater amount is necessary.

The director will give notice of the application by publication and will approve the application if no protests have been filed (I.C. § 42-202). In the event a protest is filed the director will hold a hearing (I.C. § 42-203). The application must include 1) the name and post office address of the applicant, 2) the source of the water supply, 3) the nature of the proposed use or uses and the period of use, 4) the location of the point of diversion and a description of the proposed ditch, channel, well or other works, 5) the amount of water to be diverted and used, and 6) the time to be allowed for completion of construction of such works and application of water to the proposed use (I.C. § 42-202).

The director must determine the use to which the water will be applied, whether the applicant has sufficient financial resources to effect completion of the project and whether the use will reduce the quantity of water below an amount which is necessary to supply existing right (I.C. § 42-203). The director will reject the application or grant a lesser quantity if the above criteria have not been met (Ibid.). The application is an inchoate or contingent right if the holder proceeds to perfect his permit in accordance with the statutory requirements (*Big Wood Canal Co. v. Chapman*, 45 Idaho 380, 263 P. 45, 1927).

Upon approval of his application, the applicant must proceed with due diligence to complete his appropriation within a time specified by the director (I.C. § 42-204). Failure to submit proof of appropriation causes the application to lapse. Within 60 days before the date of lapsing the director can reinstate the permit upon a showing of reasonable cause but the priority date is changed (I.C. § 42-218(a)).

If proof of the appropriation is submitted on time and it meets all statutory requirements the applicant will be issued a license which confirms his water use (I.C. § 42-219). Such proof must state, 1) the name and post office address of such user, 2) the use to which the water had been applied, 3) the amount used together with a statement of the manner in which the quantity of water was determined and the qualifications of the person making such a determination, 4) the place of use and, if for irrigation, the description by legal subdivision of the land so irrigated, 5) the name of the canal or ditch or other works by which water was conducted to the place of use, 6) the relation or understanding upon which the right to take water from such works is based, 7) the source of supply from which the water is diverted, 8) the date of priority which the user is prepared to establish and 9) other information which might be required by the Department. This license is binding on the State and constitutes prima facie evidence of the water right. The water right is appurtenant to the land upon which the water is to be used (*Basinger v. Taylor*, 36 Idaho 591, 211 P. 1085, 1922).

Several cases were decided in 1974 bearing upon the rights of parties in acquiring any permit to appropriate. The basic questions of who can appropriate, how, for what purpose, and burden of proof were answered by the Court. In *Lemon v. Hardy* (519 P.2d 1168, 1974), the court held that an applicant who does not own land to be irrigated under the application nor owns the point of diversion is not entitled to a permit for such speculated purposes, and that even though his application is amended and the defects cleared, his application will be junior in time to another who submits an application during the interval.

Later in the year, the Supreme Court in a divided opinion (one judge concurring, a second concurring specially in a separate opinion and two judges dissenting) held that: 1) a state agency can appropriate unappropriated water, 2) an appropriation for recreation purposes and preservation of scenic views is for a beneficial purpose, and 3) a physical diversion is not essential to a valid water right (*State Parks Department v. Idaho Department of Water Administration*, 530 P.2d 924, 1974). The Parks Department was responding to a legislative enactment authorizing the Department to appropriate water for the citizens of the state in a specific area because of the scenic beauty and recreation potential (I.C. § 67-4307). The use was for maintenance of instream flows.

Ground Water--
All ground waters of the state are declared public property (I.C. § 42-226) subject to use *only* by appropriation (I.C. § 42-229).[2] Prior to 1963, an appropriation of ground water could have been established by pumping and applying the water to a beneficial use (*Silkey v. Tiegs*, 51 Idaho 344, 5 P.2d 1049, 1931).

The State legislature in the early 1950's recognized the need to apply flexibility in the prior appropriations concept to the allocation of ground water. The traditional policy requiring beneficial use through appropriation and priority of right among users was affirmed, but "a reasonable exercise of this right shall not block full economic development of underground water resources" (I.C. § 42-226). The Director of the Department of Water Resources must establish and protect reasonable ground water pumping levels for early appropriators, however (Ibid.).

Idaho statute defines ground water as being all water under the surface of the ground, without regard to the geological structure in which it is standing or moving (I.C. § 42-230). The procedure for acquiring a ground water right is the same as that for acquiring any other water right under the statutory process (I.C. § 42-229). In addition to the considerations previously discussed, the granting of a permit is also dependent on whether or not the locality has been designated a critical ground water area.

Critical ground water areas are to be determined by the Director of the Department of Water Resources. A critical ground water area is defined as any ground water basin (or designated part of that basin) not having sufficient ground water to provide a reasonably safe supply for irrigation of cultivated lands or other uses in the basin at the current rates of withdrawal, or those rates of withdrawal projected by consideration of valid and outstanding applications and permits (I.C. § 42-230). The Director may deny an application for a permit in a critical ground water area if there is insufficient water available for the proposed ground water appropriation. If ground water is available in a lesser amount than that applied for, the Director has the discretion to issue a permit for the use of such water to the extent of water availability for such an appropriation (Ibid.).

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[2] For a recent discussion of the legal constraints and alternatives to ground water use in Idaho, see: Ralston, D. R., et al., *Analysis of the Impact of Legal Constraints on Ground Water Resources Development in Idaho*, Ida. Bureau of Mines and Geology, Univ. of Ida., Moscow, Pamphlet #158, Sept. 1974.

Prescriptive Water Rights--
A water right may be lost by adverse possession or it may be gained by prescription (Brossard v. Morgan, 7 Idaho 215, 61 P. 1031, 1900; St. John Irrigation Co. v. Danforth, 50 Idaho 513, 298 P. 365, 1931; Pflueger v. Hopple, 66 Idaho 152, 156 P.2d 316, 1945). However, as one case has pointed out, it is difficult for one to acquire prescriptive rights to water because:

> a prescriptive right to the use of water cannot be acquired by the use thereof with the consent or permission of the owners, and as under the law of this state, it is a misdemeanor for the one who has the right to use the water to waste it, and the law requires him to permit it to flow down the stream if his necessities for the time did not require its use, it is made by the law, difficult to acquire a prescriptive right to the use of the water (Hall v. Blackman, 8 Idaho 272, 68 P. 19, 1902; Mountain Home Irrigation District v. Duffy, 79 Idaho 435, 319 P.2d 965, 1957).

One entitled to the use of water is required by law to let others use it if the original owner has no use for it a specific point in time. Therefore the prescriptive owner may claim ownership under a law which, in commanding the consent of the true owner, defeats the requirements of prescriptive use. The requirements of a prescriptive title are such that adverse use must be open (visible and notorious); adverse and hostile to the claim of the rightful owner; exclusive of use by the rightful owner; continuous and uninterrupted; under a claim of right; and for the period required by the statute of limitations (Harris v. Chapman, 51 Idaho 283, 5 P.2d 733, 1931). The difficulty in obtaining a prescriptive right is apparent in that the law requires that the water be left in the stream when not in use. This would defeat the requirement of being adverse and hostile to the rightful owner, since the law has required the rightful owner to allow it to happen. It would also defeat the requirement that it be notorious, which in this context is generally construed to mean against the law. Notorious may also mean visible; with the knowledge on the part of the true owner. Since the law requires that the true owner leave the water in the stream this would obviously be met. It may also be required that the use interfere with the use of the rightful owner. If the law requires the rightful owner to leave water in the stream, there can be no interference with the rightful use of the true owner and a prescriptive right would therefore be defeated.

Closely related to adverse use is the doctrine of estoppel, which comes into use when a long and continuous acquiescence in another's use and enjoyment of property precludes one from subsequently asserting one's own claim (Hillcrest Irrigation District v. Nampa and Meridian Irrigation District, 57 Idaho 403, 66 P.2d 115, 1937). Where a user has stood by and watched for many years while another party used his water on a theory that they had valid title to water rights and has incurred large indebtedness on the strength of the title, the law feels that it is fair that the original owner be estopped from questioning the latter's title. A mere lapse of time, however, is not sufficient. It has to be shown that the defendant has been misled to the point of injury by the failure of the original owner to assert appropriate rights (Mountain Home Irrigation District v. Duffy, 79 Idaho 435, 319 P.2d 965, 1957).

Preferences--
The Idaho Constitution sets out the traditional distinction between a priority of right and right to exercise a preference. Between appropriators the priority of the appropriation gives the better right but when a scarcity arises, domestic uses are preferred above all other uses, followed by agricultural uses and manufacturing uses. However, in a mining district, the use of water for mining or milling purposes relating to mining have preference over manufacturing and agricultural uses. If a preference is exercised the owner of a divested right must be fully compensated (Montpelier Mill Co. v. Montpelier, 19 Idaho 212, 113 P. 741, 1911).

4.2.3 Adjudicating Water Rights

Idaho has a statutory procedure which aids in the solution of conflicts between users of a common water system (I.C. § 1401 to 1414). When a suit is filed in the District Court where the water source is located, the Court may request the Department of Water Resources to make an examination of water systems and report its findings to the court. The Director of the Department of Water Resources may also initiate an adjudication action in District Court upon receipt of a petition signed by five or more of the users of water from any water system or by a majority where the number of users is less than five.

Notice of the filing of this action is given by publication. Protests against the commencement of adjudication may be filed. If it is determined that such an action should proceed, the Director begins with a mapping of the water system and all system water users. Upon completion of this phase of the examination, the Director is authorized to request the District Judge to join all claimants from the source being adjudicated, to require that they be served with summons and to require that they file claims for their water uses (I.C. § 42-1409).

Based upon the claims submitted and his investigations, the Director shall prepare a report listing the existing rights in the particular water system. This report is to be filed with the court and a copy sent to each claimant. After notice is sent and hearings conducted, a decree shall be issued by the Court setting out as a minimum: the identity of the right holder, priority, amount, season, purpose and place of use (tract to which the right is appurtenant) and point of diversion (I.C. § 42-1410). This adjudication establishes the rights of all claimants in the stream system and those, who, with notice, failed to appear, are held to have forfeited all rights to water not claimed (I.C. § 42-1411). The right of appeal to the Supreme Court exists for claimants and the Department (I.C. § 42-1412).

4.2.4 Conditions of Use

Beneficial Use--
Both the Idaho Constitution and subsequent statutory enactments require that water be appropriated for beneficial uses, but neither source of the law nor agency regulations on court decisions have defined the term. Section 42-104 states that "the appropriation must be for some useful or beneficial purpose and when the appropriator or his successor in interest ceases to use it for such purpose, the right ceases."

It is further provided by statute that no licensee or claimant of a decreed water right "shall at any time be entitled to the use of more water than can beneficially be applied on the lands for the benefit of which such right may have been confirmed" (I.C. § 42-220). This limitation to beneficial use is held to be subject to local and community customs and those rules and regulations which may be adopted by a majority of the users from a common source of supply. These user rules and regulations are designed to encourage the economical use of water (I.C. § 42-220).

Thus the use of water is limited not only by the amount which has been specifically appropriated but also the amount which can be used beneficially (Lee v. Hanford, 21 Idaho 327, 121 P. 558, 1912).

Duty of Water--

Beneficial use is the limitation on the amount of water that an appropriator is entitled to. However, there is also a statutory duty of water in Idaho governing appropriations of water for irrigation. The law provides that no one is entitled to divert more than one cubic foot per second of the normal flow for each fifty acres of land to be irrigated nor more than five acre-feet of stored water per year for each acre to be irrigated. These limits may be exceeded if it can be shown to the satisfaction of the Department of Water Resources that increased applications are necessary (I.C. § 42-202). The requirements of the land are taken into consideration in determining the quantity of water to which the appropriator should be entitled (Kirk v. Bartholemew, 3 Idaho 367, 29 P. 40, 1892).

The point of measurement has been the subject of some controversy. Section 42-110, however, provides that the holders of decreed rights are entitled to have their water measured at the point of diversion. This has been affirmed by the Idaho Supreme Court (Bennett v. Nourse, 22 Idaho 249, 125 P. 1038, 1912).

All that exists is a right to use the water for beneficial purposes (Albrethsen v. Wood River Land Co., 40 Idaho 49, 231 P. 418, 1924). The Idaho Supreme Court has held it is the policy of the laws of Idaho to require the highest and greatest possible duty from the waters of the state. This is both in the interest of agriculture and other useful and beneficial purposes (Farmers' Co-operative Co. v. Riverside Irr. Dist., 16 Idaho 525, 102 P. 481, 1909; Washington State Sugar Co. v. Goodrich, 27 Idaho 26, 147 P. 1073, 1915). It has further held that it is the policy of the law to prevent the waste of water (Stickney v. Hanrahan, 7 Idaho 424, 63 P. 189, 1900; Poole v. Olaveson, 82 Idaho 496, 356 P.2d 61, 1960). It has been pointed out by a federal court, however, that while conservation of water is a wise public policy, so is the conservation of the energy and well-being of the water user. Furthermore, the economical use of water is not synonymous with minimum use (Caldwell v. Twin Falls Salmon River Land and Water Co., 225 Fed. 584, D. Idaho 1915). This argument provides some insight on the position that improvement of present irrigation works or practices may be overly expensive and therefore not required under the law of Idaho. On the other hand, it could be argued that since the waters of the state of Idaho are held to belong to the state (I.C. § 42-101), the right to beneficial use is all that can be acquired, it being contrary to public policy for a water user to use more water than is necessary for irrigation of his land (Coulson v. Aberdeen-Springfield Canal Co., 39 Idaho 320, 227 P. 29, 1924; Glavin v. Salmon River Canal Co., 44 Idaho 583, 258 P. 537, 1927). This argument could be made regarding the policy of the law to encourage measures to both prevent the waste of water and to increase its effective use (Reynolds Irr. District v. Sproat, 69 Idaho 315, 206 P.2d 774, 1949; Simonson v. Moon, 72 Idaho 39, 237 P.2d 93, 1951). The argument in favor of requiring that the title to public waters is vested with the state for the use and benefit of its citizens. Only the actual water used is the property of the water right holder and that water being misused should revert to the state. This would act as an incentive to encourage the efficient use of water.

It has been stated by the Idaho Supreme Court that "a well settled rule of public policy that the right to the use of the public water of the state can only be claimed where it is applied to beneficial use in the manner required by law" (Albrethsen v. Wood River Land Co., 40 Idaho 49, 231 P. 418, 1924). This would seem to indicate, contrary to the protection of the Federal Courts in Idaho, that any use beyond the requirements of the individual user is not a beneficial use. Such waters would be considered extra water, not being applied in the manner required by law, since it is contrary to public policy to use water in any way but the most efficient.

The Element of Economics and Reasonable Use--

In addition to beneficial use, factors of economy and reasonableness have been imposed on the appropriator. The courts have been careful not to impose the interpretation of reasonable use to the point of economic unreasonableness upon the appropriator. This point has been stated by one court as:

> It is the settled law of this state that no person can, by virtue of a prior appropriation, claim or hold more water than is necessary for the use of the appropriation. And the amount of water necessary for the purpose of irrigation of the lands in question and the condition of the lands to be irrigated should be taken into consideration. A prior appropriator is only entitled to the water to the extent that he has use for it when economically and reasonably used. It is a policy of the law of this state to require the highest and greatest possible duty from the waters of the state in the interest of agriculture and for useful and beneficial purposes (Washington State Sugar Co. v. Goodrick, 27 Idaho 26, 147 P. 1073, 1915).

In an earlier decision the Idaho Supreme Court stated that, in determining the duty of water, reference should always be made to the land that had been prepared for irrigation. Economical use is required in the use of water (Farmers' Co-operative Ditch Co. v. Riverside Irrigation District, 16 Idaho 525, 102 P. 481, 1909). What is a reasonable use of water is, of course, a question of fact. The method of water use commonly used in the vicinity of the use in question has a bearing on the amount of water a user is entitled to (Beasley v. Engstrom, 31 Idaho 14, 168 P. 1145, 1917). The amount of water a water user has been in the habit of using is not the true test of the duty of water. Rather, the true test is the amount actually needed for the beneficial purpose to which the water is to be applied (Graham v. Leek, 65 Idaho 279, 144 P.2d 470, 1966).

It has been further stated that reasonable methods of farming must prevail. A farmer is not, however, required to use methods which are costly in labor and money simply because waste can be saved (Twin Falls Land and Water Co. v. Twin Falls Canal Co., 7 Fed. Supp. 238, D. Idaho, 1933). This is in reference to a previous statement that if the conservation of water is a wise public policy, so also is the conservation of the energy and well-being of the water user. It should be remembered that economy of use is not synonymous with minimum use (Caldwell v. Twin Falls Salmon

River Land and Water Co., 225 Fed. 584, D. Idaho 1915). The Idaho Supreme Court has held that the fact a junior appropriator could use water already decreed to a senior appropriator more efficiently than the senior appropriator was immaterial with the determination of who had a superior right (Martiny v. Wells, 91 Idaho 215, 419 P.2d 470, 1966).

Waste--
The waste of water can be considered the opposite of using the water beneficially. Waste water is that water which has been used by a prior user which has left his lands and goes upon the lands of another, or otherwise becomes available for use by another, without returning to a natural watercourse.

The legislature specifically prohibits the wilful or wanton waste of water used for irrigating by diverting it for unnecessary uses or purposes, or allowing it to run to waste when such conduct is detrimental to an irrigator (I.C. § 18-4302). One committing such waste is guilty of a misdemeanor.

Likewise, one who receives water from a company or other purveyor of water is not to use more water than "good husbandry" requires for his crops (I.C. § 42-916). A person who uses water in excess of his needs is liable both to the purveyor of water and anyone entitled to the excess water who sustained damage from the former's abuses.

By the same token, the Idaho Supreme Court has said that there is no vested right to waste or seepage water against the paramount owner thereof. This concerns the ownership of water "taken from the stream of the owner of the land or reservoir, etc." from which the water afterwards seeps or wastes (Sebern v. Moore, 44 Idaho 410, 258 P. 176, 1927). An owner of land "can use all his water, waste none of it, or apply it on other lands and thereby prevent its flow into the ditch" of another party who had been making use of the waste water with the permission of the owner of the land from which it flowed so long as there is no evidence of a grant of the water to the user (Crawford v. Inglin, 44 Idaho 563, 258 P. 541, 1927).

The Supreme Court of Idaho has adhered to the principle that no appropriator should be required to waste water for the benefit of another (Application of Boyer, 73 Idaho 152, 248 P.2d 540, 1952). The court has stated its view of the rights of junior appropriators as follows:

> It is axiomatic that no appropriator can compel another appropriator to continue the waste of water whereby the former may benefit. If, by a different method of irrigation the upper owner may so utilize his water that it will all be consumed in transpiration and consumptive use, and thus no waste water returns by seepage or percolation to the river, no other appropriator, from the evidence herein, could complain. Instead of changing the method of use, respondent accomplishes the same result by changing the point of diversion. The rule that a junior appropriator has the right to a continuation of stream conditions as they were at the time he made his appropriation cannot compel respondent to waste his water (Ibid.).

It is clear that the general policy in Idaho against the waste of water governs to the point that junior appropriators are entitled to conditions of the stream substantially as they were when their appropriations were made. The exceptions to this rule clearly indicate the preference of Idaho for one who saves water by ceasing to waste it or ceasing to excessively apply it. As a part of such preference, the individual is to be permitted to capture the water and re-use it.

The Supreme Court has recently decided another twist to the rights of appropriators and wastage of water issue. The question arose in Gilbert v. Smith (552 P.2d 1220, Idaho, 1976) whether an upstream junior could assert a claim to water needed to satisfy a downstream senior by maintaining that he, the junior, prevented the "wasting" of water lost in the natural channel by diverting it upstream and placing it to beneficial use. Several other key issues were decided in the case (see the next section on abandonment and forfeiture), but regarding waste, the court held:

> As a rule, the law of water rights in this state embodies a policy against the waste of irrigation water. Ward v. Kidd, 87 Idaho 216, 392 P.2d 183 (1964). Such policy is not to be construed, however, so as to permit an upstream junior appropriator to interfere with the water right of a downstream senior appropriator so long as the water flowing in its natural channels would reach the point of downstream diversion. . . . We agree that if due to seepage, evaporation, channel absorption or other conditions beyond the control of the appropriator the water in the stream will not reach the point of the prior appropriator in sufficient quantity for him to apply it to beneficial use, then a junior appropriator whose diversion point is higher on the stream may divert the water. . . . (Ibid., p. 1224).

4.2.5 Manner in Which Rights May Be Adversely Affected

Water rights in Idaho can be lost by abandonment, forfeiture, adverse possession, estoppel and condemnation. Each will be discussed in turn.

Abandonment--
In reviewing the law of abandonment, the Idaho Supreme Court in August, 1976, stated:

> Abandonment is a common law concept involving the occurrence of an intention to abandon and the actual relinquishment or surrender of the water right. . . . It is not dependent necessarily upon the length of time but upon the essential element of intent. Carrington v. Crandall, 65 Idaho 525, 147 P.2d (1009); Union Grain & Elevator Co. v. McCammon Ditch Co., 41 Idaho 216, 240 P. 443 (1925); . . . Such intent may be evidenced by non-use for a substantial period of time but mere non-use is not per se abandonment. . . . (Gilbert v. Smith, 552 P.2d 1220 at 1223, Idaho, 1976).

To meet the requirements of abandonment there must be a non-use of the water coupled with an intent to forsake the right (Joyce v. Murphy Land and Irr. Co., 35 Idaho 549, 208 P. 241, 1922). This intent must be proved by clear and convincing evidence and cannot be inferred from circumstances beyond the control of the user (Perry v. Reynolds, 63 Idaho 457, 122 P.2d 508, 1942; Hodges v. Trail Creek Irr. Co., 78 Idaho 10, 297 P.2d 525, 1956) nor be characterized as permissive (Gilbert v. Smith, 552 P.2d 1220, Idaho, 1976).

Abandonment has been upheld against one who failed to exercise his water right for 25 years (Knutson v. Huggins, 62 Ida. 662, 115 P.2d 421, 1941). The court also held in Chill v. Jarvis (50 Ida. 531, 298 P. 373,

1931) that failure to pay installments on defendant's ranch and non-exercise of the water rights clearly implied the abandonment of the right.

Forfeiture--
When a user has failed to apply his water to a beneficial use for a five-year period his right to use such water may be lost and forfeited (I.C. § 42-222). The water reverts to the State and once again becomes subject to appropriation. Upon proper showing before the Director of the Department of Water Resources water may be declared to have been forfeited if it has not been applied to beneficial use for the term of five years.

The Director of the Department of Water Resources is authorized to extend the time for forfeiture of title for non-use for a period not to exceed five additional years (I.C. § 42-222). Forfeitures are not favored by the courts and the burden of establishing non-use is on the plaintiff in these cases and must be established by clear and convincing evidence (Graham v. Leek, 65 Idaho 279, 144 P.2d 475, 1943). In Zezi v. Lightfoot (57 Idaho 707, 68 P.2d 50, 1937) the court held that even though there had been non-use for a period of five years there would be no forfeiture if the owner had resumed the use of the water before an appropriation by a third party. The Supreme Court also recently (Oct. 6, 1976) decided a case, however, in which the potential non-use of water for the statutory period could have been easily documented and a valuable right lost (Olson v. Bedke, 555 P.2d 156, 1976). A lessee, under a ten-year farm lease, failed to exercise the water rights appurtenant to the leased property. The leasor attempted to terminate the lease because the lessee failed to "farm the premises in a good and farmer-like manner." The Supreme Court held that since the water right is real property it could be protected by injunction, mandamus or prohibition when threatened by irreparable injury. The lower court was of the opinion that the leasor's property interests were protected from forfeiture under a statutory provision that provides, "So long as a duly elected watermaster is charged with the administration of waters within a water district, no water user within such district can adversely possess the right of any other user" (I.C. § 42-607). However, the Supreme Court reversed and held the statute applies only to loss of water rights by adverse possessions and does not affect the potential loss under the forfeiture statute (Olson v. Bedke, 555 P.2d 156 at 160, 1976). It went on to say if lessee had failed to use the water rights of leasor, and leasor did nothing, "the unused water rights could be forfeited by non-use prior to the end of the lease, to the substantial injury of the reversionary interest" (Ibid.).

There seems to be an element of adverse use in the forfeiture argument. It has been held that even where there was non-use for five years there was no forfeiture of the water right when the owner of the right resumed the use of the water prior to its appropriation to a third party (Zezi v. Lightfoot, 57 Idaho 707, 68 P.2d 50, 1937).

Loss through abandonment and forfeiture had been complicated by wording of the statutory provision for loss by non-use. The former statutory wording was the water "shall be lost and abandoned" by failure to apply it for the prescribed period of years. The courts regularly applied the word "abandonment" and often cited the statute. Finally in 1944, the court clearly recognized the distinction between abandonment and statutory forfeiture (Carrington v. Crandall, 65 Idaho 525, 147 P.2d 1009, 1944). This position was further reinforced in Gilbert v. Smith (552 P.2d 1220, 1976) when the court acknowledged their failure to indicate the difference in the past, but:

> Nevertheless, we deem it essential for this and other future users of a similar nature to keep the concepts of abandonment and statutory forfeiture, and their application, distinct (Ibid., at 1223).

The revision in Idaho states that the water shall be "lost and forfeited" by the failure to apply water to a beneficial use for a period of five years (I.C. § 42-222).

Water rights may also be lost through forfeiture, if the right holder joined in an adjudication proceeding fails to appear and submit proof of claim to the right (I.C. § 42-1411).

Adverse Possession--
A water user can lose a water right and another party gain the title to that water under the doctrine of adverse possession (Brossard v. Morgan, 7 Idaho 215, 61 P. 1031, 1900). In order to acquire a right by adverse possession, it must be shown that the use was open and notorious, adverse and hostile, uninterrupted and continuous, exclusive of the use of the rightful owner, and under a claim of right by the adverse user for a period of five years (Harris v. Chapman, 51 Idaho 283, 5 P.2d 733, 1931). The evidence must be clear and convincing that the adverse user has established his right (Loosli v. Hesseman, 66 Idaho 469, 162 P.2d 393, 1945).

The law, however, does not favor the loss of water right to another by adverse use and has made it difficult, if not impossible, to pass title by this method. Two aspects of the law compound the adverse user's claim. The first is the application of the basic concepts of prior appropriation and beneficial use requirements. Two cases have held:

> . . . a prescriptive right to the use of water cannot be acquired by the use thereof with the consent or permission of the owners, and as under the law of this state it is made a misdemeanor for one who has the right to the use of water to waste it, and the law requires him to permit it to flow down the stream in case his necessities for the time do not require its use, . . .
> (Hall v. Blackman, 8 Idaho 272 at 282, 68 P. 19, 1902; Mountain Home Irrigation Dist. v. Duffy, 79 Idaho 435 at 443, 319 P.2d 965, 1957).

Thus, if the rightful owner does not need the water, a downstream junior appropriator can place a call for the water under his right.

The second constraint in the law which must be encountered is the five-year non-use statutory forfeiture provision. If the rightful owner fails to exercise his right for five years, the water that could be claimed under that right reverts back to the state for distribution to other water users or allocation to an applicant. In addition, the legislature has provided that no water user within a water district whose water rights are being administered by a water master will lose his rights by adverse use claims of another (I.C. § 42-607).

Condemnation--
The Idaho Constitution (Idaho Const. Art XV, Section 3) requires that in the event a preference is exercised the owner divested of his rights will be fully compensated. In addition, irrigation districts are given the power of eminent domain (I.C. § 43-908) and

eminent domain statute (I.C. § 7-701) which is applicable to real property is also applicable to water rights.

Estoppel--
Estoppel is a doctrine by which one acting in good faith carries on certain activities known to another can preclude the latter from asserting a claim contrary to activities.

Enforcement of Beneficial Use or Waste Concepts--
An appropriator is limited to the quantity of water specified in his permit that is being beneficially used and any unused water is subject to forfeiture (I.C. § 42-222). Even though the term "beneficial use" per se is not statutorily defined in Idaho an appropriation is not valid unless it is pursuant to a beneficial use (I.C. § 42-104). Idaho is a state deeply involved in agriculture and is concerned about protecting its base in this sector of the economy. Thus, when enforcement of beneficial use has been raised, the courts have held that although conservation of water is a wise public policy, and an appropriator is acting against public policy if he takes more water than necessary to irrigate his land (Coulson v. Aberdeen Springfield Canal Co., 39 Idaho 320, 227 P. 29, 1924), an appropriator should not limit his water right to his minimum needs (Caldwell v. Twin Falls Salmon River Land & Water Co., 225 F. 584, Dist. Ct. Idaho, 1915). So long as an irrigator uses reasonable farming methods, he "is not required to use methods which are costly in labor and money simply because some waste can be saved thereby" (Twin Falls Land and Water Co. v. Twin Falls Canal Co., 7 F. Supp. 238 at 252, Dist. Ct., Ida., 1933).

But earlier, the Supreme Court of Idaho said as to the application of water that economy must be required and demanded (Farmers' Cooperative Ditch Co. v. Riverside Irrigation Dist., 16 Idaho 525, 102 P. 481, 1909). The court went on to say:

> . . . Water users should not be allowed an excessive quantity of water to compensate for and counterbalance their neglect or indolence in the preparation of their lands for the successful and economical application of the water. One farmer, although he has a superior water right, should not be allowed to waste enough water in the irrigation of his land to supply both him and his neighbor, simply because his land is not adequately prepared for the economical application of the water (Quoted in Vineyard Land and Stock Co. v. Twin Falls Salmon River Land & Water Co. et al., 245 F. 9 at 22, C.C.A.: 9th C., 1917).[3]

In most instances, the water users are concerned about the quantity of water used by those more senior in priority or upstream from their diversion point. But water quality is also of particular concern when an upstream discharge degrades the quality of water to the point of impairing a downstream appropriator's use. Case law is limited in Idaho on this issue, and no case was found involving an upstream irrigator diminishing the quality of water through his return flows to the detriment of a downstream irrigator. The court has held, however, that while a mining operation may necessarily cause some contamination to a stream, the degradation cannot inflict substantial injury upon another user of the water, in this case agriculturalists Ravndale v. Northfork Placers, 91 P.2d 368, Idaho 1939). It tempered its holding by saying further that an agriculturalist may not captiously complain of a reasonable use of water by a miner upstream because it pollutes and makes the water slightly less desirable or causes slight inconvenience or occasional annoyance, "or even some degree of interference, so long as such do no substantial damage" (Ibid., p. 372).

4.2.6 Legal Incentives and Disincentives for More Efficient Water Use Practices

Irrigation Return Flow--
Irrigation return flows occur through deep percolation from the over-application of water to the land, seepage from conveyance systems and tail water run-off. Ditches can be constructed for capturing and utilizing seepage, waste or spring water and are governed by the same rules as apply to appropriation of flowing streams (I.C. § 42-107). Under this statute, the Supreme Court has concluded that surface waste and seepage waters may be appropriated:

> subject to the right of the owner to cease wasting it or in good faith, to change the place or manner of wasting it, or to recapture it, so long as he applied it to beneficial use (Sebern v. Moore, 44 Idaho 410, 258 P. 176, 1927).

A downstream appropriator is entitled to have flow patterns and stream conditions maintained substantially as they were at the time of his appropriation. Any change by an upstream user which would reduce or alter the return flow pattern is prohibited (Cartier v. Buck, 9 Idaho 571, 75 P. 612, 1904). However, if the upstream practice is wasteful then the lower appropriator cannot require that such a use be maintained (Colthorp v. Mountain Home Irr. Dist., 66 Idaho 173, 157 P.2d 1005, 1945).

The question of the right of the United States to the use of return water arising from one of its projects constructed under the auspices of the Bureau of Reclamation was decided in accordance with these principles. The United States contended that substantially all of the water in the creek on which the defendant had made an appropriation, during the irrigation season, came from government canals by way of surface waste and seepage of the percolating waters from irrigated fields. The government argued that it has a superior right to capture this water and apply it to other beneficial uses on the project. The Federal Court stated that the point involved was scarcely open to controversy, for:

> one, who by the expenditure of money and labor diverts appropriable water from a stream, and thus makes it available for fruitful purposes is entitled to its exclusive control for so long as he is able and willing to apply it to beneficial uses. And such a right extends to what is commonly known as wastage from surface run-off and deep percolation necessarily incident to practical irrigation. Consideration to both public policy and natural justice strongly supports such a rule. Nor is it essential to his control that the appropriator maintain continuous actual possession of such water, so long as he does not abandon it or forfeit it by failure to use, he may assert his rights. It is not necessary to confine it upon his own land, or convey it in an

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[3] This case concerns water use in Nevada and Idaho for irrigation, with the upstream Nevada defendant's flood irrigating meadows and the downstream Idaho plaintiff irrigating a project constructed under the Carey Act.

> artificial conduit. It is requisite, of course, that he be able to identify it. But subject to that limitation, he may conduct it through natural channels and may even commingle it or suffer it to commingle with other waters. In short, the rights of an appropriator in these respects are not affected by the fact that the water has once been used (United States v. Hagan, 276 Fed. 41, D. Idaho, 1921).

The Federal Court in this decision, referred to the Idaho statute previously mentioned providing that ditches can be constructed for the purpose of utilizing seepage and waste streams (I.C. § 42-107). It stated that this statute neither expressly nor by implication authorized citizens to construct ditches to utilize seepage or waste water, rightfully under the control of another any more than it authorized construction of ditches to utilize springs already appropriated by another, or the water of a running stream.

The right for capture and use of return flows is not an absolute unqualified right, however. In two cases the claims of junior appropriators under this doctrine have been denied (Hutchins, 1968, p. 70). In each case the return flows from the upper lands were so excessive as to impute wastefulness rather than beneficial use to the exercise of the original appropriative right. In both cases the denial of the claim of the lower appropriator was premised upon the principles relating to the appropriation of waste water.

In one case, the action was brought to recover damages because of the alleged deprivation of seepage waters from the upper tract which had been claimed by the owner of the lower tract. This deprivation resulted from a change in the point of diversion and place of use of water on the upper tract (Colthorp v. Mountain Home Irr. Dist., 66 Idaho 173, 157 P.2d 1005, 1945). The plaintiff alleged that 75% of water applied to the upper tract seeped back into the stream and was, therefore, subject to subsequent diversion. It was further alleged that long use of the water on the lower tract constituted an appropriative right to its use and that the change of use from the upper tract to other lands infringed on the right of the lower owner. The Idaho Supreme Court held that the statutory right to appropriate seepage water was subject to the right of the owner to cease wasting it or to change the place or manner of its use. It further held that to prevent a change in the point of diversion and place of use of water, the injury must be to a water right, but that the plaintiff did not plead that the change would injure the water, or the right decreed to the lower ranch. Further, the upstream owner could not be required to continue to irrigate the upper ranch, nor to continue to waste 75% of the decreed water to the benefit of the plaintiff. The upper owner could not be enjoined from ceasing to waste the decreed water in making beneficial use of it.

In the second case, the court reiterated that no appropriator is required to waste water for the benefit of another and if he can utilize his water so that all would be "consumed in transpiration and consumptive use," the downstream junior has no right to complain (Application of Boyer, 73 Idaho 152 at 163, 243 P.2d 540, 1952).

Salvaged and Developed Waters--

A few cases in Idaho recognize the right of one who salvages water to claim an appropriation of such water. The burden of proof rests upon the claimant of these rights to prove that the water salvaged had not, prior to salvage, been appropriated or used by others with prior rights (Hill and Gauchay v. Green, 47 Idaho 157, 274 P. 110, 1928). In Reno v. Richards (32 Idaho 1, 178 P. 81, 1918) the claim was made that moving obstructions from the stream channel, including brush and fallen logs, and excavating channels from sandbars and other obstructions for a considerable distance, the flow of the stream had been augmented. The Supreme Court of Idaho held that there was no incentive for the savings of water unless the persons who accomplished the task reaped the benefits of their efforts and that the amount of water saved should inure to their benefit. Consequently, since the trial court had found that the party had effected a substantial increase in the flow of the tributary, it became the duty of the trial court to define the increase of the flow for the use of the plaintiffs.

It was found in a later case that an additional three second feet of water in a tributary creek had been saved and put to use. Prior to the savings, all such waters had been lost in the channel of the creek and had not reached the main stream by subflow or other means. Accordingly, the three second feet saved was awarded to the parties who had made the savings (Hill and Gauchay v. Green, 47 Idaho 157, 274 P. 110, 1928).

As a final example, a company, which constructed a pipeline approximately seven miles above the point of diversion of a number of individuals, allowed the individual appropriators lower on the stream to divert their water to the pipeline. Evidence showed that a loss of 10% in the stream occurred prior to building the pipeline between the point of the pipeline construction and the appropriator's previous point of diversion from the mouth of the stream. The court held that the company had materially augmented the amount of water available from the stream for beneficial use and should therefore be decreed a right to the quantity of water formerly lost from the creek. It further held that this right should have greater priority than the rights of the other parties to the litigation (Basinger v. Taylor, 36 Idaho 591, 211 P. 1085, 1922).

Idaho has an interesting provision which encourages construction of wells to drain land or capture water lost from irrigation (I.C. § 42-228). This provision allowed the reuse of the captured waters providing the well drillers comply with section 42-238, Idaho Code, regarding licensing and compliance with well construction standards. Salvaged waters are distinguished from developed waters. Developed waters are those waters which, in their natural state, are not a part of a watercourse and are not subject to existing rights. The party developing the water is entitled to use such waters, senior to all other water users (Nampa and Meridian Irr. Dist. v. Welsh, 52 Idaho 73, 157 P.2d 617, 1932). So where a person develops the water use potential of a spring that does not flow into a stream and is not shown to be connected to a ground water source, he is entitled to the senior use of those waters (St. John Irrigation Co. v. Danforth, 50 Idaho 513, 298 P. 365, 1931). Likewise, an irrigation district that augments its supply through drains collecting water which do not affect surface flows or ground water sources, can claim the developed waters (Nampa and Meridian Irr. Dist. v. Welsh, 52 Idaho 279, 15 P.2d 617, 1932).

Although these rules appear clear-cut, their application as a general proposition would depend upon the facts in each case. The State, however, is cognizant of the need to induce more efficient practices among water users, and has recommended that the Soil

Conservation Service and other federal agencies identify possibilities and effects of reorganization or renovation of existing and proposed canal systems to obtain more efficient water use (Interim Report, 1972, Recommendation 26, p. 257). In addition, a recent study was concluded for the State incentive programs for improved water use efficiency have been analyzed and discussed (Incentives, 1976).

Provisions for Transfer of Water Rights and Diversions--

Idaho law provides that a person entitled to use water, or a person owning any land to which water has been made appurtenant, may change the point of diversion or the place of use of the water (or both) if the water rights of others are not injured by the change (I.C. § 42-108 and 42-222). The critical point of the statute is that injury may not occur to the water right of another. The rule with respect to the right to make a change has been stated:

> The appropriator of water . . . may change the place of diversion if the rights acquired by others are not thereby interfered with by the change and no injury results to other appropriators thereby from . . . A subsequent appropriator has a vested right as against his senior to insist upon a continuance of the conditions that existed at the time he made his appropriation, provided a change would injure a subsequent appropriator has no right to change the point of diversion when it will in any manner injure a subsequent appropriator (*Bennett v. Nourse*, 22 Idaho 249, 125 P. 1038, 1912).

One of the common problems with changing either a point of diversion or a place of use is that other appropriators are deprived of the benefit of return flows from the lands of the appropriator who seeks to make the change. The downstream appropriator is in a position of considerable strength in Idaho. Many of the decisions which have been registered are to the effect that a junior appropriator initiates a water right on the strength of the existence of return flows to the stream channel and obtains the benefit of such return flows in exercising a junior right. The junior appropriator is then entitled to a continuance of the conditions which existed when the appropriation was made. The appropriator may enjoin a senior appropriator from the taking the waters to a place from which the seepage and waste will not reach the junior appropriator's diversion (*Hall v. Blackman*, 8 Idaho 272, 68 P. 19, 1902).

There are few decisions in Idaho involving changes in the purpose of use of appropriated water. The principles regarding the change of a place of use or a point of diversion govern these cases. In one case, for example, the prior appropriator of water was using it to operate a sawmill. The appropriator attempted to transfer his appropriation to others upstream for irrigation purposes. This attempt to change the use of the water as well as the place of use was denied as constituting a change from a nonconsumptive use to a consumptive use. This in itself would have been injurious to downstream users. The attempt to change the use and point of diversion upstream above the diversions of junior appropriators would have defeated the rights of such appropriators. So it was a combination of the change of use, place of use and purpose of use that resulted in denial of the petition (*Washington State Sugar Co. v. Goodrick*, 27 Idaho 26, 147 P. 1073, 1915).

For a change in the place, period, or nature of use or other substantial changes in method of diversion or proposed use of water, the permit holder must make application to the Department of Water Resources (I.C. § 42-211).

As a real property right, a water right can be transferred, sold, mortgaged or otherwise treated like real property in its disposition. Current recordation of water is a major void in most western states but Idaho does have a voluntary system. Water rights are tabulated by a permit number assigned the right when an application is received and the name of the right holder recorded. However, the ownership is kept current by recording transfers to others only when requested with the burden for requesting the change of ownership upon the purchase (Letter dated March 4, 1975, from Dept. of Water Resources to author). The other types of transfers are recorded according to the requirements outlined above.

4.2.7 Water Disposal and Drainage

Diffused waters are those waters from rain and melting snow, which are diffused over the surface of the ground and are not part of any natural stream or body of water (*Washington County Irr. Dist. v. Talbay*, 55 Idaho 382, 43 P.2d 943, 1935). In *Harper v. Johannesen* (84 Idaho 278, 371 P.2d 842, 1962), the Idaho Supreme Court stated that an upland owner has an easement to allow diffused surface water to drain naturally upon lower lands if the acts of the upland owner do not increase the burden on the lower land. As such, he has the right to take protective measures to prevent damage to his land from floodwaters but cannot increase the burden on other owners (Ibid.). This is commonly referred to as the civil law or natural flow doctrine of drainage.

A landowner is entitled to capture the natural precipitation on his own land if it is applied to a beneficial use (*Franklin Cub River Pumping v. LeFevre*, 79 Idaho 107, 311 P.2d 763, 1957).

4.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

4.3.1 State Water Agencies

As stated in section 4.1, the formation of a water resources agency was called for under a constitutional amendment in 1964, with the subsequent establishment of the Water Resources Board and Department of Water Administration in 1965. The water agencies were reorganized in 1974 in an effort to place all water quantity functions under one agency, the Department of Water Resources.

General administrative supervision is vested with the Director of the Department of Water Resources. The Department is divided into three divisions: administration, operations, and planning. Generally, the Administrative Division handles personnel matters, legal activities, water policy, financial matters and supervision. The Operations Division is in charge of water rights administration and adjudication assistance, with construction and licensing of well drillers, review and approval of formation of irrigation districts and supervision over distribution of water. The Planning Division administers contracts, conducts studies, formulates river basins and state water plans and provides technical advice (Annual Report, 1975).

All appropriations under the statutory method must be initiated by filing an application to appropriate with the Director (I.C. § 42-202).

Upon receipt of the application, the Department of Water Resources shall prepare a notice specifying the number of the application, the date of filing, the name and post office address of the applicant, the source of the water, the amount of water to be appropriated, the nature of the proposed use, the approximate location of the point of diversion and point of use. This notice will include the statement that any protests against the approval of the application should be filed with the Department within ten days of the last day of publication of this notice. The notice is to be printed in a newspaper of general circulation for two successive weeks. If the application is approved, the Department requires that actual construction work and the application of the water to full beneficial use be completed within five years from the date of the approval. This time limit may be lessened or extended at the discretion of the Department, depending on the nature of the project (I.C. § 42-204).

The Director is charged with the responsibility of approving applications for appropriation, changes of a point of diversion, and changes of a place of use (I.C. § 42-202, 42-217, 42-222). To expedite these responsibilities the state has been divided into water divisions by statute. The Department of Water Resources is authorized to further subdivide the state into water districts for purposes of administration (I.C. § 42-601, 42-604). For these districts to have supervisory powers over the waters, it is necessary that the appropriation be adjudicated by the court (I.C. § 42-604; see also Marsters v. United States, 236 Fed. 663, C.C.A. 9th, 1916).

Each of these districts is supervised by a watermaster (I.C. § 42-605). The watermaster is required by statute, under the direction of the Department of Water Resources, to close the headgates of ditches diverting from streams or other sources to supply the rights of others in time of scarcity. The Supreme Court of Idaho has held that it is incumbent upon the watermaster during a scarcity of water to treat an unadjudicated water right as an inferior to a decreed water right regardless of the time at which the undecreed right was initiated by the application and permit (Big Wood Canal Co. v. Chapman, 45 Idaho 380, 263 P. 45, 1927).

The Director of the Department of Water Resources also has jurisdiction over ground water administration in Idaho. In addition to being authorized to require proper measuring devices and control structures on wells, the Director may administer various rights in the available water supply. This includes the authority to make an administrative determination of conflicting claims between surface and ground water users (I.C. § 42-237(a) to 42-237(e)).

The Water Resources Board was created to coordinate and integrate a multiple-use water resources policy within the State. Its powers include the power to conduct studies and investigations to formulate and implement a statewide water plan. The board can also construct and operate water conservation and development projects, appropriate water, protect Idaho's water from diversion outside the State and can initiate judicial proceedings for the adjudication of water rights (I.C. § 42-1734, 42-1739).

4.3.2 Judicial Bodies

Any person aggrieved by a director's decision can appeal to the district court (I.C. § 42-204). Suit may be filed in district court to adjudicate rights in a water source. Idaho has no specially designated water courts.

4.3.3 Water Users and Their Organizational Structure

Individuals and Private Companies--
Section 42-202 allows any person, association or corporation to acquire the right to use waters beneficially. To insure that water users are facilitated in making the most effective use of their water and that with the right to use water there is a duty to use it appropriately, the Idaho legislature has adopted numerous provisions providing for guidelines and responsibilities of water purveyors and users. By statute, those owning or controlling any ditch, canal or lateral have a duty to appoint a superintendent or watermaster to measure the water to those issuing from the delivery works, and such distribution system is referred to as a water district (I.C. § 42-901). It is further the duty of any person, association or corporation delivering or distributing water to provide necessary gates and measuring devices (I.C. § 42-903), to deliver at some convenient point (I.C. § 42-905), and when under contract of sale or rental, to deliver upon proper demand being made (I.C. § 42-912).

If three or more people receive water from a canal or reservoir at the same point and convey it to their lands through common lateral, the users shall constitute a water users' association (I.C. § 42-4301) with responsibility to improve and maintain their ditches, and assess the users for costs (I.C. § 42-1303). If a user fails to pay the assessment the association can refuse delivery of water to him (I.C. § 42-1305). Others owning or controlling ditches, canals, or conduits have a duty to maintain the conveyance works (I.C. §§ 42-1202 and 1203), and prevent injury or damage to others from such structures (I.C. § 42-1204).

Water users have two specific forms of liability that may be imposed. If one uses more water than good husbandry requires for his particular uses, he may be liable to the purveyor of water for the value of the water used in excess and to others damaged as a result of their not receiving the water, to the extent of their damage (I.C. § 42-916). Also, if one, without the consent of the watermaster, diverts water or opens or shuts any gates with the intent to divert water and deprives another of the use of this water when that person is entitled to the use, or cuts, damages or destroys any conveyance works, is liable in a civil action to any person injured for three times the actual damages sustained (I.C. § 42-902).

As for irrigation companies, they are not bound to maintain conditions resulting in the waste of water from any part of their systems for the benefit of individuals who have been making use of such water (Twin Falls Canal Co. v. Damman, 277 Fed. 331, D. Idaho, 1920).

Districts--
Water related districts which can be created in Idaho are drainage districts (I.C. §§ 42-2901 to 2980), flood control districts (I.C. §§ 42-3101 to 3124), water and sewer districts (I.C. §§ 42-3201 to 3227), and irrigation districts (I.C. §§ 43-101 to 2112). The board of commissioners of a drainage district can appropriate waters which have been made available by the construction of drainage works if this will not impair existing rights (I.C. § 42-2902). Section 42-2915 states:

> In determining the amount which each tract of land will be benefited by such proposed drainage system the commissioners shall

> consider the damage done to low land from seepage and saturation by irrigation water from high land, and the necessity for the carrying off of waste water, and such high lands shall be considered as being benefited to the extent and in the amount that such lands are responsible for damage to low lands from seepage and saturation by irrigation water.

Irrigation districts are corporations with a public as opposed to a governmental purpose and function for profit. When a majority of landowners desire to provide for irrigation of their lands they are authorized to form an irrigation district (I.C. § 43-101).

Irrigation districts have been confronted with problems concerning waste and seepage waters. The beginning point of the controversy would be the 1952 statement that:

> it is axiomatic that no appropriator can compel any other appropriator to continue the waste of water whereby the former may benefit (Application of Boyer, 73 Idaho 152, 248 P.2d 540, 1952; Colthorp v. Mountain Home Irrigation District, 66 Idaho 173, 157 P.2d 1005, 1945).

It is clear that there is no requirement that the waste of water be continued. The situation that has faced irrigation districts is the problem of liability for lands inside the district damaged by accumulations of seepage and waste waters. In one case, to avoid liability, the directors of an irrigation district contracted to supply the seepage and waste water to lands outside the district for irrigation purposes (Jensen v. Boise-Kuna Irrigation District, 75 Idaho 133, 269 P.2d 755, 1954). The validity of these contracts was litigated in an action brought against the district by the contracting landowners to recover damages for failure to make available agreed amounts of water. The Idaho Supreme Court held that the contracts, which would have been void had they been for water owned by the district and dedicated to the irrigation of district lands, were valid because the seepage and waste waters did not fall in that category.

In another instance, the irrigation district sought to compel a landowner who was geographically within the district but legally outside of it, to pay for the use of water that had seeped onto the landowner's land from the district's canal and from the land of the district's landowners. It was shown that the district did not claim any rights to such water by reason of either intent or attempt to retain or recapture it. The Idaho Supreme Court stated that such water had become subject to recapture by anyone who could apply it to beneficial use unless the water, without the interference of the person capturing it, would have returned to the stream from whence it was appropriated. This would also be the case if the recapture would not prejudice the rights of any prior appropriator, since the district's right to use the water had not been asserted. No charge may be made or enforced by the district (Milner Low Lift Irrigation District v. Eagen, 49 Idaho 184, 286 P. 608, 1930), because it owns nothing to sell.

Liability to district can exist for damages caused by a dam or conveyance structure breaking and flooding private property where the district is negligent in maintaining its works (Brizindine v. Nampa Meridian Irrigation District, 548 P.2d 80, Idaho, 1976). The above case also reviewed the past decisions imposing liability upon districts and recognized that liability in negligence exists for seepage (Harris v. Preston-Whitney Irrigation Co., 92 Idaho 398, 443 P.2d 482, 1968), overflow (Casey v. Nampa & Meridian Irrigation District, 85 Idaho 299, 379 P.2d 409, 1963), and breakage (Johnson v. Burley Irrigation District, 78 Idaho 392, 304 P.2d 912, 1956). It went on to hold that the doctrine of res ipsa loquita applies to create an inference of negligence or breach of duty. This doctrine is applicable in situations when (1) the instrumentality causing the damage was under control of the defendant and (2) the circumstances were such that common knowledge and experience would justify the inference that the accident would not have ordinarily happened in the absence of negligence (Brizindine v. Nampa Meridian Irrigation District, supra, p. 83).

4.4 POLLUTION CONTROL

Water Quality--

Water quality control in Idaho is the responsibility of the Division of Environment, Department of Health and Welfare. The Board of Health is authorized to establish water quality rules and regulations necessary to preserve and enhance the quality of water for beneficial uses, to establish effluent quality rules and to establish a permit system for the discharge of effluents (I.C. § 42-1734).

The Idaho Board of Health adopted rules and regulations for interstate waters of Idaho and for the disposal of sewage and industrial wastes in 1967. These standards have been accepted by the Secretary of the Interior as meeting the requirements of the Water Quality Act (Interim State Water Plan, preliminary report, State of Idaho, Idaho Water Resources Board, Boise, p. 92, 1972).

Water quality is not generally viewed as a serious problem in Idaho (Ibid.). It is recognized, however, that the problem may come to exist, and that an opportunity exists to maintain water quality and insure continued opportunities for all water uses.

In Idaho, the dominant philosophy concerning water resources seems to be one of utilizing the resource for economic development. There appears to have been little environmental protection built into the Idaho statutes governing the appropriation of water. This is reflected by the fact that the people drafting the interim report for the state water plan have candidly stated that one of the constraints to their efforts is that they have been limited by time, funds, and staff in performing the economic, engineering and environmental analysis necessary to formulate the plan (Ibid., p. 55). The lack of both adequate data and studies associated with water use functions has hampered the Water Board's efforts, especially in the environmental areas of water quality, fish and wildlife and water-based recreation (Ibid.)

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APPENDIX A REPORT 5

KANSAS

5.1 HISTORICAL BACKGROUND

Water resources are not evenly distributed within the state of Kansas. The average annual precipitation is 27 inches (Geraghty, 1973). It varies, however, from 16 inches in some areas to more than 40 inches in other areas. The state's two major rivers are the Arkansas and Kansas Rivers. The western third of the state has immense quantities of ground water. The ground water reserves of eastern Kansas are found only in the alluvial valleys of major streams. Of the total 82,264 square miles comprising the state, the acres irrigated have increased from 1,380,000 acres in 1966 to 2,360,000 acres in 1974 (1974 Irrigation Survey, 1974).

The Kansas Supreme Court in early decisions stated that the riparian doctrine controlled use and enjoyment of the State Water Resources (Shamleffer v. Council Grove Peerless Mill Co., 18 Kan. 24, 1877; Emporia v. Soden, 25 Kan. 588, 1881; and Clark v. Allaman, 71 Kan. 206, 80 Pac. 571, 1906).[1] In 1866, legislation was passed to implement an appropriation doctrine regarding irrigation (Kansas Laws 1886, ch. 115). This legislation was subsequently struck down in Frazell v. Bundley (144 Kan. 84, 58 P.2d 95, 1936). Clark v. Allaman (71 Kan. 206, 80 Pac. 571, 1905), decided in 1905, held that prior to 1866 there had been no recognition of rights to use of water by priority of possession.

In 1868, the Kansas Legislature declared that "the common law as modified by constitutional and statutory law, judicial decisions, and the conditions and wants of the people, shall remain in force in aid of the General Statutes of this state" (Kansas Statutes, §77-109).

While early Kansas decisions recognized the natural flow theory of riparian rights, the Kansas Supreme Court adopted the reasonable use theory in State ex rel Emery v. Knapp (167 Kan. 546, 207 P.2d 440, 1949).

Legislation was enacted in 1945 which implemented the appropriation system as the sole means of obtaining water rights in the state (K.S.A. §§82a-701 to 725). In 1949, the Kansas Supreme Court upheld the constitutionality of the water code in State ex rel Emery v. Knapp (State ex rel Emery v. Knapp, 167 Kan. 546, 207 P.2d 440, 1949). This legislation was amended in 1957. Under the amended code, unallocated water was subject to appropriation and all prior rights, whether appropriation or riparian, were preserved and protected (K.S.A. §82a-703). Those water users having common law rights had to be compensated for any damage by reason of the loss of their rights. This legislation also made the administration of water rights the responsibility of the state.

5.2 SUBSTANTIVE LAW

5.2.1 Property Right in Water

Kansas statutes state that "all water within the state of Kansas is hereby dedicated to the use of the people of the state, subject to the control and regulation of the state" (K.S.A. §82a-702), and that such waters may be appropriated for beneficial use (K.S.A. §82a-703).

Riparian rights are the historical basis of some uses. All new uses, however, are appropriative. The appropriative right is a usufructuary right, the basis of which is beneficial use. Kansas has defined a water right as:

> any vested right or appropriation right under which a person may lawfully divert and use water. It is a real property right appurtenant to and severable from the land on or in connection with which the water is used and such water right passes as an appurtenance with a conveyance of the land by deed, lease, mortgage, will, or voluntary disposal or by inheritance (K.S.A. §82a-701g).

The appropriator is entitled to a continuing right to the use of appropriated waters, but not beyond that reasonably required and actually used.

Water flowing in a natural stream is not subject to private ownership. Any private rights which do attach are strictly usufructuary rights to take the water into physical possession and apply it to a beneficial use. Private rights of ownership do not attach to the corpus of the water as long as it remains in the stream (Wallace v. Winfield, 98 Kan. 651, 159 P.11, 1916; K.S.A. §82a-707).

In Wallace v. Winfield (98 Kan. 651, 159 P.11, 1916), the Kansas Supreme Court held that one who had not taken the water from the river nor reduced it to possession had no title to the water and therefore could not sell it. In Wood v. Fowler (26 Kan. 682, 40 Am. Rep. 330, 1882), the court held that waters of a navigable stream belong to the public and not to the owner of adjacent riparian land.

5.2.2 Acquisition of Water Rights

Surface Waters--
As of 1945, the sole method of acquiring water rights has been through the filing of an application for a permit with the Chief Engineer of the Division of Water Resources, State Board of Agriculture. The one exception to this procedure is the use of water for domestic purposes (K.S.A.§§ 82a-703, 705, 705a, and 708a). The Chief Engineer must give approval to the application if the proposed use will not affect the public interest or impair existing rights. Furthermore, the Chief Engineer has the authority to reject the application or modify it to conformity. The permit granted by the Chief Engineer authorizes the applicant to construct the necessary diversion and distribution works and to divert a specific quantity of water to be applied to a beneficial use. Once diversion and application of the water to a beneficial use has been completed, the appropriator must give proof to the administrator that the appropriation has been perfected in accordance with the application in order to receive a certificate or license which evidences the completion of the appropriated right.

The permit application must contain a description of the nature and extent of the proposed diversion (K.S.A. §82a-709). In deciding whether the application will affect the public interest, the Chief Engineer is to consider the area, safe yield and recharge rate of the appropriate water supply, the priority of existing claims, and the amount of water to be used (K.S.A.

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[1] See Shurty, Kansas Water Law, 1967, for a good historical assessment of the law.

§82a-711). Each appropriation is conditioned by the fact that the right relates to a specific quantity (K.S.A. §82a-711a). In determining whether a proposed application will impair existing rights, the code defines impairment to be the unreasonable raising or lowering of the static level or unreasonable increase or decrease of the streamflow or the unreasonable deterioration of the water quality at the user's point of diversion beyond a reasonable economic limit (K.S.A. §82a-711). The Chief Engineer can attach conditions, terms and limitations subsequent to approval in order to protect the public interest (K.S.A. §82a-712). Decisions of the Chief Engineer are appealable to the district court (K.S.A. §82a-711).

Upon approval of the application, construction should proceed and water be applied to a beneficial use within a time determined by the Chief Engineer (K.S.A. §82a-712 to 713). If cause can be shown, an extension of time may be granted. Upon completion of the work, the Chief Engineer is notified and a certificate is issued as evidence of a perfected right (K.S.A. §82a-714).

Appropriation may be applied for by a person, an incorporated group of persons, a corporation, or a governmental agency or entity. A person is defined as a natural person, partnership, organization, corporation, municipality, and agency of the Federal Government. An appropriation is made by a person who obtains a permit from the Chief Engineer which authorizes him to divert and apply a given quantity for a designated beneficial use (K.S.A. §82a-701, 709).

Priority dates from the time of filing the application with the Chief Engineer, except for domestic uses whose priority dates from the time the application is filed or from the time the water is placed to a beneficial use if an application has not been filed (K.S.A. §82a-707c).

An application for a permit must be filed with the Chief Engineer if it is contemplated to store and use water if one is desirous of acquiring and perfecting a right. An application for a permit must also be filed if anyone constructs a dam or other water obstruction or changes or diminishes the current of any stream.

Currently, springs seem to be encompassed by the language of the water code which reserved the water for the people of the state. Therefore, any right to the use of spring waters must be initiated by the filing of an application with the Chief Engineer.

In 1907, the Kansas Supreme Court held that a spring fed by percolating water belonged to the owner of the property upon which it arose (*Jobling v. Tuttle*, 75 Kan. 351, 89 Pac. 699, 1907). In a later case, the Court ruled that a stream fed largely from a spring was controlled by the law governing watercourses as were the rights of the owners of the land upon which the spring arose and the owners of land abutting the watercourse (*Weaver v. Beech Aircraft Corp.*, 180 Kan. 224, 303 P.2d 159, 1956). Therefore, when a spring flows into and forms a watercourse, the rights of the parties to the spring are governed by the law of watercourses.

A watercourse has been defined in Kansas as a channel, with bank and bed, and having a flow of water. The flow need not be continuous but must be substantial (*Hornor v. Baxter Springs*, 116 Kan. 288, 226 Pac. 779, 1924). The exclusive method of obtaining rights to unallocated water is under the appropriation doctrine.

Ground Water--

In both 1907 and 1944, the Supreme Court of Kansas held that percolating waters belonged to the owner of the soil and could be used by the owner. The Court, thereby, adopted the rule of absolute ownership (*Jobling v. Tuttle*, 15 Kan. 351, 89 P.699, 1907; *State ex rel, Peterson v. State Board of Agriculture*, 158 Kan. 603, 140 Pac. 2d.604, 1944). In *Emporia v. Soden* (Kan. 588, 1881), the Court held that the underflow of a surface stream does not belong to the overlying landowner. Ground water is now subject to administration and control by the state under the prior appropriation doctrine concepts.

Any person using water from an artesian well and applying it to a beneficial use is deemed to have appropriated such water (K.S.A. §42-307). Provision is made for the creation of ground water management districts to conserve and manage water resources (K.S.A. §82a-1020 to 1035). The Kansas Ground Water Exploration and Protection Act of 1945 was enacted to provide for the exploration and protection of ground water through licensing and regulating water well contractors. The Act was designed to protect the health and general welfare of Kansas citizens, to protect ground water resources from waste and potential pollution and provide data on potential water supplies to allow for the economic and efficient utilization of water resources.

The Act of 1945 dedicated all unallocated water to the use of the people of the state and made provision for the acquisition of rights by the filing of an application for a permit with the Chief Engineer (K.S.A. §82a-702, 705). The owner of an existing right cannot obtain a vested right to an existing water level. Protection and preservation is provided for in the Act for prior rights, if the water was in a beneficial use, and for water placed in a beneficial use within a reasonable time after the Act was passed (K.S.A. §82a-701d). Impairment is limited to the unreasonable raising or lowering of the static water level as consideration of the effect of new applications upon existing rights. Each application is subject to the express condition that the right must allow for a reasonable raising or lowering of the static water level (K.S.A. §82a-711a).

Kansas law also provides for local management of ground water uses. Specifically:

> It is hereby recognized that a need exists for the creation of special districts for the proper management of the ground water resources of the state; for the conservation of ground water resources; for the prevention of economic deterioration; for associated endeavors within the state of Kansas through the stabilization of agriculture; and to secure for Kansas the benefit of its fertile soils and favorable location with respect to national and world markets. It is the policy of this act to preserve basic water use doctrine and to establish the right of local water users to determine their destiny with respect to the use of the ground water insofar as it does not conflict with the basic laws and policies of the state of Kansas. It is, therefore, declared that in the public interest it is necessary and advisable to permit the establishment of ground water management districts (K.S.A. §82a-1020).

After certification of the description of lands to be included within a proposed district and before a ground water management district is organized, a petition must be circulated within one year by a steering committee and filed with the Secretary of State (K.S.A. §82a-1023). The petition must be signed by at least 50 eligible voters of the district and must set forth:

> (1) The proposed name of the district, which name shall end with the words 'ground water management district no. ___.' It shall be the duty of the Secretary of State to assign a number to each such district in the order in which petitions for organizations are received in his office.
> (2) A description of the lands to be included within the proposed district identified by township, range and section numbers and fractions thereof, and other areas as appropriate and a map showing the contiguous lands to be included in the district.
> (3) A statement of the purposes for which the district is to be organized.
> (4) A statement of the number of persons that will constitute the elected board of directors of the district, which shall be an uneven number of not less than three (3) or more than fifteen (15).
> (5) The names and addresses of the persons who constitute the steering committee.
> (6) A prayer for the organization and incorporation of the district.
> (7) Any other matter deemed essential by the steering committee (K.S.A. §82a-1023b).

Prescriptive Water Rights--
"No water rights of any kind may be acquired hereafter solely by adverse use, adverse possession, or by estoppel" (K.S.A. §82a-705).

Preferences--
A preference system is established when uses of water conflict. Domestic uses have priority followed by municipal uses, irrigation, industrial use, recreational use, and water power use. The owner of a water right for an inferior beneficial use can only be deprived of the right through condemnation proceedings (K.S.A. §82a-707b).

5.2.3 Adjudicating Water Rights

Kansas does have a statutory procedure for determining the rights of all persons who were beneficially using water on or before June 28, 1945 (K.S.A. §82a-704). The Chief Engineer must conduct studies and investigations to determine the extent of existing uses. The determination is not deemed an adjudication of the relation between any vested right holders regarding the operation or exercise of vested rights (K.S.A. §82a-704). All users are given notice of the order. Appeal to the district court is available. This statute reads in part that:

> The Chief Engineer or his authorized representatives shall proceed with the necessary steps to gather data and other information as may be essential to the proper understanding and determination of the vested rights of all parties using water for beneficial purposes other than domestic....
>
> The Chief Engineer shall then make an order determining the rights of all persons making beneficial use of water for all purposes other than domestic on or before June 28, 1945, and the then extent of their uses and shall notify all such water users as to the contents of such order....
>
> Provided, that no such determination shall be deemed an adjudication of the relation between any vested right holders with respect to the operation or exercise of their vested rights (K.S.A. §82a-701).

Under the 1945 Act, a vested right is defined as:

> The right of a person under a common law or statutory claim to continue the use of water having actually been applied to any beneficial use, including domestic use, on or before June 28, 1945, to the extent of the maximum quantity and rate of diversion for the beneficial use made thereof, and shall include the right to take and use water for beneficial purposes where a person is engaged in the construction of works for the actual application of water to a beneficial use of June 28, 1945, provided such use within a reasonable time thereafter by such persons, his heirs, successors, or assigns. Such a right does not include, however, those common law claims under which a person has not applied water to any beneficial use within the periods of time set out in this subsection (K.S.A. §82a-701d).

In Williams v. City of Wichita (190 Kan. 317, 374 R.2d 578, 1962), the Supreme Court of Kansas stated that the legislature can define the extent of vested rights to common law users. Therefore, even though riparian rights are given protection by law, such rights are limited by beneficial use.

5.2.4 Conditions of Use

Beneficial Use--
The measure and extent of an appropriative right is beneficial use. This is limited to the reasonable needs of an appropriator (K.S.A. §42-302, 82a-707, 718). However, Kansas statutes privide that:

> ...the date of priority of an appropriation right, and not the purpose of the use, determines the right to divert and use water at any time when the supply is not sufficient to satisfy all water rights that attach to it. The holder of a water right for an inferior beneficial use of water shall not be deprived of his use of the water either temporarily or permanently as long as he is making proper use of it under the terms and conditions of his water right and the laws of this state, other than through condemnation (K.S.A. §82a-707b).

Overapplication of water to the land might not be considered a beneficial use. Simply diverting water without applying it to a beneficial use, i.e., the irrigation of crops, could result in the loss of such right.

Waste--
In Kansas, the Chief Engineer has the authority to "make and to require any water user to make periodic water waste and water quality checks and...to report the findings thereof" (K.S.A. §82a-706c). Further, it is the policy of the state to "encourage, promote and secure the maximum beneficial use, control and

development of the water resources of the state" (K.S.A. §82a-901), and "appropriation rights in excess of the reasonable needs of the appropriators shall not be allowed" (K.S.A. §82a-707d). Other general goals of the state include the plugging of abandoned wells, the control of seepage areas through which mineralized waters pollute supplies of usable surface and underground waters, and to have reasonable watercourses to be free from toxic substances and acts (K.S.A. §82a-928). There exists in Kansas strong statutory language prohibiting waste.

Kansas applies a general rule of one to two acre-feet per acre of water as a duty in allocating an available supply. Appropriation rights, however, in excess of that applied to beneficial use, to include a reasonable allowance for waste, seepage and evaporation, are not allowed (K.S.A. §42-302, 1964; K.S.A. §82a-707d).

It is unlawful to dispose of wastes without the possession of a permit with the exceptions of wastes from normal farming operations or from residential activities on land owned or leased by the individual or from processing or manufacturing operations which do not create a public nuisance or adversely affect the public health (K.S.A. §65-3409). Development of a statewide solid waste management plan is the responsibility of the Board of Health which may adopt rules and regulations to protect the surface and subsurface waters from pollution by oil, gas, salt water injection wells, and the discharge of sewage. More importantly, the Board establishes water quality standards to protect the beneficial use of water (K.S.A. §65-171d). A recent amendment prohibits the discharge of mercury, in any quantity, into the waters of the state, which would be detrimental to the public health, safety and welfare or beneficial uses of water (K.S.A. §65-171).

5.2.5 Manner in Which Water Rights May Be Affected

Provision is made for the abandonment and termination of a water right if the owner does not beneficially use the water for three successive years without due and sufficient cause (K.S.A. §82a-718). "Due and sufficient cause" is not defined in the statutes. The owner must be notified in writing by the Chief Engineer before his rights can be declared abandoned. The owner has an opportunity to appear and show cause why such rights should not be terminated. The code also provides that no water right of any kind can be acquired solely by adverse possession, or by estoppel (K.S.A. §82a-705). Kansas statutes provide that:

> All appropriations of water must be for some beneficial purpose. Every water right of every kind shall be deemed abandoned and shall terminate when without due and sufficient cause no lawful, beneficial use is henceforth made of water under such right for three successive years. Before any water right shall be declared abandoned and terminated, the user shall be notified in writing by the Chief Engineer and given an opportunity to appear at a designated time and and place and show cause why his water right should not be declared abandoned and terminated.
>
> Such notice shall contain the following information in addition to the time and place of hearing: 1) A description of the water right in question; 2) the substantial location of the point of diversion; 3) the general description of the lands or places where such waters were used; 4) a statement that unless due and sufficient cause be shown the water right will be held abandoned and terminated. Such notice may be served by registered or certified mail and shall be posted at least thirty (30) days before the date of the hearing and shall be sent to the last known address of the holder of the water right. The Chief Engineer shall within sixty (60) days after such hearing make an order determining whether such water right shall be held abandoned and terminated and shall notify the holder of the water right as to the contents of such order by registered or certified mail sent to the last known address of the holder of the water right.
>
> The verified report of the Chief Engineer or his authorized representative shall be prima facie evidence of the abandonment and termination of any water right. Any decision or order of the Chief Engineer declaring the abandonment and termination of any water right shall be in full force and effect from the date of its entry in the records of his office unless and until its operation shall be stayed by an appeal therefrom. Appeals from orders or decisions declaring abandonment and termination may be taken by the holder of the water right (K.S.A. §82a-718).

Adverse Possession--

No water rights can be acquired by adverse possession (K.S.A. §82a-705).

Condemnation--

Section 26-513 provides that "private property shall not be taken or damaged for public use without just compensation." As for water rights, section 82-707 lists an order of preference for water uses when different uses conflict. The order of preference is domestic, municipal, irrigation, industrial, recreational, and water power uses. The section goes on to say that the priority date, not the preference order, shall determine the distribution of water during times when the supply does not sufficiently meet all demands, and that "other than condemnation," a "non-preferred" senior user will not be deprived of his right to divert water permanently or temporarily if he is complying with the terms and conditions of his permit.

Water districts have the power of eminent domain. Also, there are statutory provisions for the condemnation of a new channel whenever the old channel has been altered by a stream (K.S.A. §82a-201 to 205).

Enforcement of Beneficial Use or Waste Concepts--

An appropriation is limited to the quantity of water specified in the permit and is subject to beneficial use (K.S.A. §82a-709). Appropriation in excess of reasonable needs are not allowed (K.S.A. §82a-707d).

The right of an appropriator must relate to a specific quantity of water. It must allow for a reasonable raising or lowering of the static water level and for the reasonable increase or decrease of the streamflow at the appropriator's point of diversion. If an appropriator fails to apply the specified quantity to a beneficial use, the unused water is subject to the provisions of the abandonment statute (K.S.A. §82a-718).

5.2.6 Legal Incentives and Disincentives For More Efficient Water Use Practices

Irrigation Return Flow--

Return waters are those waters which return to the stream by seepage, deep percolation and tail water runoff and include waste water. Return waters can be affected by a change in the place of use or type of use by the upstream appropriator. Such a change requires the Chief Engineer's approval, and will be approved if change can be made without impairing existing rights (K.S.A. §82a-708b).

There have been no cases in Kansas directed to the question of using return flows from irrigated lands.

A downstream senior appropriator is entitled to have the stream flow in a sufficient quantity to satisfy existing appropriations. An upstream junior appropriator cannot, therefore, use water if such use would deprive the downstream senior of an appropriated quantity. While there have been no cases in Kansas dealing with the appropriation of waste waters, section 82a-703 states that: "subject to vested rights, all waters within the state may be appropriated for beneficial use." There seems to be no impediment to the appropriation of waste waters.

Kansas statutes provide that the proprietor of any lands saturated by seepage waters from water works may drain the water into any natural stream, arroyo, or watercourse or he may apply it to agricultural purposes (K.S.A. §42-353). To use seepage waters from unconstructed works, one is required to apply for a permit to appropriate and to obtain the approval of the State Engineer.

Salvaged and Developed Waters--

There are no court decisions in Kansas found to deal with the issue of rights to salvaged or developed waters. However, in a case that involved the obstruction of the flow of diffused surface water, the Kansas Supreme Court stated that a landowner had the right to use and accumulate all water falling upon his own land (Gibbs v. Williams, 25 Kan. 214, 1881).

Provisions for Transfer of Water Rights and Diversions--

The place of use, point of diversion, or nature of use may be changed without the appropriator suffering a loss of priority (K.S.A. §82a-708b). Such changes are initiated by application to the Chief Engineer. The Chief Engineer must determine if the change involves the same source as the original appropriation (K.S.A. §82a-708b).

A conveyance falls within the statute of frauds and must be in writing (K.S.A.§42-121). Separate transfers of water rights may be made by deeds executed and recorded as conveyances of real estate (K.S.A. §42-121).

In Clark v. Allaman (71 Kan. 296, 80 p.571), the Court held that a riparian right is an incident to the ownership of riparian land. Such a right can be severed from the land and independently transferred (Shamleffer v. Council Grove Peerless Mill Co., 18 Kan. 24, 1877). As was previously stated, it is no longer possible to acquire rights under the riparian doctrine.

5.2.7 Water Disposal and Drainage

The common law or common enemy rule was followed in Kansas as to all diffused surface waters up to 1911 (Singleton v. Atchison, T. & S.F.R.R., 67 Kans. 284, 72 P.786, 1903). However, a case decided in that year held that when the water was used on agricultural land, the civil law rule would apply (Dyer v. Stahlhut, 147 Kan. 767, 78 P.2d, 900, 1939). This same case defined diffused surface waters as water over the surface of the ground, sometimes forming temporary accumulations in depressions of the land, but without occupying any distinct channel. In Broadway Mfg. Co. v. Leavenworth Terminal Railway and Co. (81 Kan. 616, Pac. 1034, 1910), the Kansas Supreme Court considered the overflow of a watercourse which was permanently separated from the stream to be diffused surface water.

Martin v. Lown (111 Kan. 752, 208 Pac. 565, 1922) established the current rule with respect to the disposal of diffused surface waters. Under this rule, a lower landowner of agricultural lands cannot construct a dam or levee to obstruct the flow of diffused surface water to the detriment of an upper landowner. Conversely, an upper landowner cannot divert diffused surface water from his land onto another's lands nor increase its flow to the injury of a lower owner. Landowners are authorized to drain their lands into channels leading into drains on public highways or to natural watercourses. Any land which has been saturated by seepage waters can be drained into any arroyo, stream, or watercourse (K.S.A. §24-106, 42-353, 42-354).

Kansas statutes also authorize landowners to drain their lands, in the course of natural drainage, into channels leading to natural watercourses, or into drains on public highways (K.S.A. §24-106, 1964).

5.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

5.3.1 State Water Agencies

Principal state agencies for water administration are the Division of Water Resources and the Water Resources Board. Responsibility for the development and conservation of the water resources within the state also belongs to rural water districts, ground water management districts, watershed districts, and municipalities (K.S.A.§82a-601 to 637, 82a-1020 to 1035, 24-1201, 13-1205, 13-2401 to 2428).

The Water Resources Board is made up of seven members appointed by the Governor (K.S.A. §74-2605). The Board's duties include the obligations to: (1) collect and compile information relating to water, soil and climate; (2) review plans for water resource development, management and use by any state or local agency; (3) develop plans for water resource development within each watershed of the state; (4) make recommendations to other state agencies for the coordination of water management and conservation practices and studies; and (5) study resource laws to determine the needs for future legislation (K.S.A. §74-2608).

Legislation was enacted in 1963 to prepare a state water plan which would assure proper development and control of water resources (K.S.A. §82a-901 to 903). Long-range goals and objectives are to be established for conservation, utilization, disposal, and flood control of waters (K.S.A. §82-904). Authorization is given to the Board to contract with public corporations as well as individuals for the sale of water from state storage projects (K.S.A. §82a-914-917).

General administrative control over water is placed in the hands of the Division of Water Resources. This Division, a part of the State Board of Agriculture, is administered by the Chief Engineer. The Chief Engineer administers the statutes governing appropriation and distribution of water (K.S.A. §82a-706).

The Chief Engineer may adopt rules and regulations with the approval of the Board of Agriculture, and can gather information and data concerning irrigation projects (K.S.A. §74-509). The Chief Engineer is further directed to conserve, control, allot, regulate, and aid in the distribution of state waters taking cognizance of existing rights (K.S.A. §82a-706). Adjudicated rights must be protected and implemented in the terms and provisions of the court decree, by the Division of Water Resources (K.S.A. §82a-706). To facilitate proper distribution of water, the Chief Engineer can demand the installation and maintenance of control structures and measuring devices. These structures may be regulated by the Chief Engineer in order to assure the proper allocation of water among users (K.S.A. §82a-706c). Upon request of the Chief Engineer, the Attorney General may bring suit to enjoin any unlawful appropriation, diversion, or use of water (K.S.A. §82a-706d).

State laws now administered by the Division of Water Resources, Kansas State Board of Agriculture, relate to (list courtesy of Guy E. Gibson, Chief Engineer):

1. The construction of flood control works by cities (K.S.A. §12-635 to 646a).
2. The zoning of floodplains by cities and counties (K.S.A. 1970 Supplement, §12-734, 735).
3. The obstruction to flow of surface water (K.S.A. §24-105).
4. The construction, repair and maintenance of levees (K.S.A. §24-126).
5. The organization and operation of certain drainage districts (K.S.A. §24-656 to 668).
6. The organization and operation of watershed districts (K.S.A. §24-1201-1233).
7. The organization and operation of irrigation districts (K.S.A. §42-701 to 730).
8. The construction of dams, placing of obstruction in streams, and changing the course, current or cross-section of a stream (K.S.A. §82a-301 to 305).
9. The establishing of bank lines as boundaries within which counties may clean and maintain stream channels (K.S.A. §82a-307 to 311).
10. The reduction in assessed valuation of land where dams are built to create reservoirs for the storage of water (1975 Session Laws, Ch. 495, K.S.A. §82a-405 to 409a and K.S.A. §79-201g).
11. Irrigation investigation (K.S.A. §74-509).
12. Dams-Federal Agriculture Conservation Program (K.S.A. §82a-312 to 314).
13. Rural Water Supply District (K.S.A. §82a-601 to 611).
14. Rural Water Districts (K.S.A. §82a-612 to 637).
15. Plans and surveys by Division of Water Resources (K.S.A. §82a-411 and 412).
16. The Kansas-Nebraska-Colorado Republican River Compact (K.S.A. §82a-518).
17. The Kansas-Colorado Arkansas River Compact (K.S.A. §82a-520).
18. The Kansas-Oklahoma Arkansas River Compact (K.S.A. §82-528).
19. The Kansas-Nebraska Big Blue River Compact (K.S.A. §82a-529).
20. The appropriation of water and establishment of water rights (K.S.A. §82a-701 to 725).
21. The organization and operation of ground water management districts (K.S.A. §82a-1020 to 1035).
22. The Division cooperates with the State Water Resources Board, which was established in 1955, in the preparation of a general comprehensive state plan of water resources development (K.S.A. §74-2605 to 2611, and K.S.A. §24-901).
23. An act concerning the placing of car bodies along or in a stream for purposes of bank stabilization and soil erosion control (K.S.A. §68-2203).
24. An act concerning a grant fund for rural water districts (K.S.A. 1975 Supplement, §82a-638).
25. State Water Plan Storage Act (K.S.A. §82a-1301 to 1320).
26. Governor Robert docking officially designated the Division of Water Resources, Kansas State Board of Agriculture, as the clearinghouse for floodplain insurance information.
27. Governor Robert Docking officially designated the Division of Water Resources, Kansas State Board of Agriculture, as the agency responsible for the inventory of dams in Kansas under the National Dam Inspection Program.
28. The withdrawal and transportation of ground water in this state for use in an adjoining state (House Bill No. 2814).
29. Policy Statement of the State Conservation Commission on the Administration of a Special Fund for Assistance in Construction of Watersheds and the Chief Engineer's responsibilities as set forth therein.

Figure 1 is the organization chart of the Division. Field officers and water commissioners are appointed to supervise the distribution of water. Interference with a water commissioner in the distribution of water may result in criminal sanctions (K.S.A. §42-393 to 42-397).

5.3.2 Judicial Bodies

Kansas does not have special water courts. Appeal from the Chief Engineer's decision is to the district court (K.S.A. §82a-708b).

5.4 POLLUTION CONTROL

The Water Quality Control Act is administered by the Board of Health (K.S.A.§65-3301 to 3416). The Board is assisted by a fifteen-member advisory council which can recommend rules, regulations and standards to the Board for implementation of the Act. Recommendations may be made for a plan to finance solid waste systems (K.S.A. §65-3404). The Board is given authorization to develop a statewide solid waste management plan.

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ORGANIZATION CHART, WATER RESOURCES DIVISION
(51 Full-Time)
(6 Seasonal)

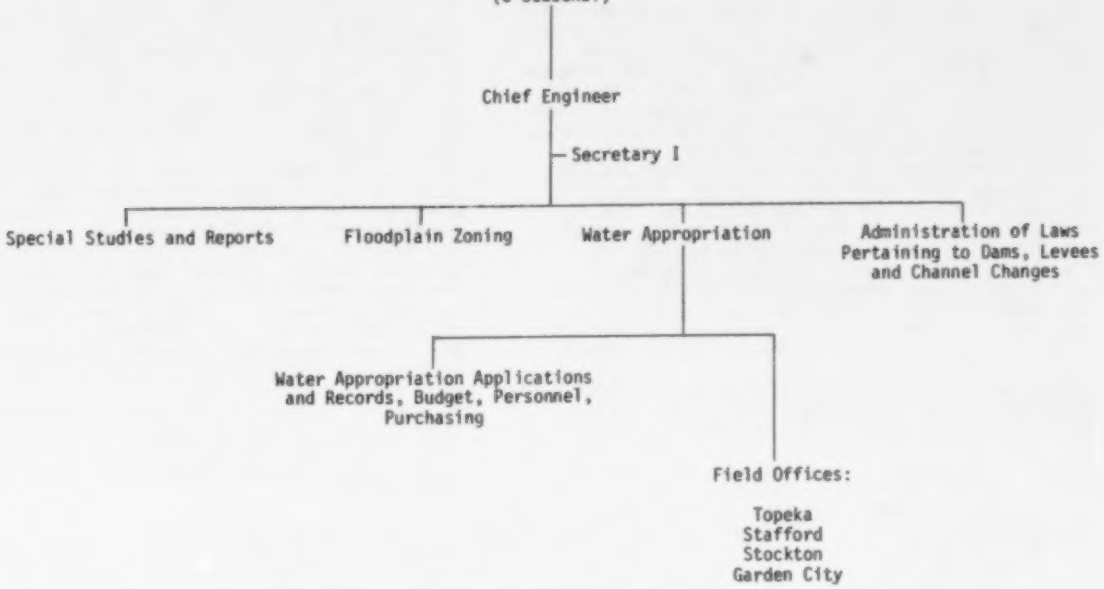
Chief Engineer
Secretary I
Special Studies and Reports
Floodplain Zoning
Water Appropriation
Administration of Laws Pertaining to Dams, Levees and Channel Changes
Water Appropriation Applications and Records, Budget, Personnel, Purchasing
Field Offices:
Topeka
Stafford
Stockton
Garden City

FIGURE 1

APPENDIX A REPORT 6

MONTANA

6.1 HISTORICAL BACKGROUND

Montana is one of many Western states caught in the crisis of being mediator of many conflicts, the root of which is water. The state, with a total of 147,138 square miles, receives an annual precipitation of 15 inches, resulting in a mean annual runoff average for the state of 3.5 inches (U.S.G.S. Rept. No. 29, 1961, p. 138). The surface waters, which constitute the major source of water supply, occur in two major drainage basins, the Columbia and Missouri River Basins. The area of the former basin is only 17% of the state, but accounts for 58% of the state's total stream flow, while the Missouri Basin encompasses almost 82% of the state and accounts for only 40% of the stream flow (Gopala Krishnan, 1971, p. 7). Agricultural uses for irrigation purposes are estimated to be about 7,600 mgd or 2.5 million acre-feet from both surface and ground water for application to approximately 2.2 million acres of land (Geraghty, 1973).

A significant part of the turmoil experienced in Montana over development during the past 5 to 10 years has been caused by inadequacies and inconsistencies in the state's water laws. At a time when several large irrigation projects were requiring anticipated supplies, the energy crisis hit the nation, only to fall upon the state with increased vigor in the speculation of land and water rights values. Montana's vast coal reserves became a potential consumer of reallocated water supplies. To add to the squaring off of the two arch-rivals for water--irrigation and mining--recreation and other environmental uses of water began laying claims to available supplies.

Previous to the 1972 constitutional amendment affecting waters of the state and the major changes brought about one year later with the Montana Water Use Act, the state has enjoyed a fairly uneventful history in water law changes.

Due to its topography and climate, Montana adopted the rule of prior appropriation early in its history.[1] As early as 1874 the Montana Supreme Court characterized a water right as a species of realty which requires for its transfer the same form and solemnity as the conveyance of any other real estate (Barkley v. Tieleke, 2 Mont. 59, 1874).

Until 1885 water rights were acquired in accordance with the customs and regulations of the early miners and settlers. These customs regarding water rights were traceable to those rules which developed in the California mining fields.

In 1885, a statutory procedure for appropriating water was developed. This procedure called for the posting of notices at the point of diversion, the filing of certificates with a county clerk and completing the development of the claim with due diligence (R.C.M. § 89-810, 1947). This was changed in 1921 when a procedure was initiated for claiming water rights through court proceedings when water in an adjudicated stream was involved (R.C.M. § 89-829, 89-839).

Ground water control became important in the late 1950's, and in 1961, the Montana legislative assembly enacted a law providing for appropriation and regulation of such waters (R.C.M. §89-2911 to 2936). In 1963, the body of ground water law was increased with provisions to authorize the State Water Conservation Board to appropriate water and require the licensing of well drillers.

Historically Montana has enjoyed a uniqueness in its administration of water rights. Water rights were administered by a system of court-appointed water commissioners instead of an administrative office such as a state engineer.

In 1965, the duties and authority of the State Engineer were transferred to the State Water Conservation Board, which consisted of seven members (Mont. L. sec. 17, ch. 28, 1965). This Board was redesignated the Montana Water Resources Board in 1965 (R.C.M. § 89-103). Finally, the Montana Water Resources Board was abolished by the Executive Reorganization Act of 1971 and its units and functions transferred to the Division of Water Resources, Department of Natural Resources and Conservation (R.C.M. § 82A-1505).

The problems of the law not keeping pace with social and economic pressures and requirements in the State were well explicated in 1965 by Professor Stone (Stone, 1971).[2] He identified 13 key problem areas in the State's water laws:

1) acquisition of a water right by "use" and prescription;
2) the statutory method of acquiring waters from an adjudicated stream;
3) the exclusive method of appropriating waters from adjudicated streams;
4) acquisition of rights by purchase;
5) the duration of the right;
6) access to the water source;
7) diversions only from natural watercourses;
8) usage of flood, seepage and waste waters;
9) unification of ground and surface water laws;
10) ascertainment of past vested rights and
11) adjudication of water rights;
12) administration of water rights and
13) termination of rights (Ibid., pp. 1-16).

Emphasis upon the need and reasons for change in the state's water laws was brought to the public's attention in January 1971 with the convening of the Symposium on Water Law and its Relationship to the Economic Development of Montana's Water Resources in Helena, Montana. The participants were to discuss the state's water law relative to the development of its water resources and identify particular problem areas that impeded or created conflicts in water use and development.[3]

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[1] For an excellent historical review of Montana's water laws, see Albert W. Stone, "Montana Water Rights --A New Opportunity," 34 Mont. l. Rev. 57, 1973.

[2] Because of their particular relevance to the water scene in Montana in the early 1970's, the Water Resources Center, Montana University, published a monograph entitled Montana's Water Law Problems in 1971, which contains three excellent articles by Professor Albert Stone.

The result of the public, professional and academic interests in the desire to improve the water laws of Montana was that the constitution was amended in 1972 and a Water Use Act passed in 1973. The constitutional amendment declared (1) all existing rights to beneficial use are recognized and confirmed, (2) all beneficial uses, to include sale and rental of water as a public use, (3) all waters within the state are state property and subject to appropriation, and (4) an administrative system for control, recommendations and regulations of water rights will be created. The 1973 Water Use Act was a major change to the state's water laws. Its major features, which will be discussed in greater detail in the following sections, include initiating a permit system for water rights, centralizing water right records in the Department of Natural Resources and Conservation, providing a process for determination and recording of existing water rights and granting authority to administer, control, and regulate water rights in Montana.

In 1974, the Montana Water Resources Act of 1967, which enunciated a state policy committed to achieving optimum beneficial use of its water resources in light of pressing energy requirements and existing public uses,[4] was amended to grant power to the Department to construct, operate and maintain water projects in the public interest with approval by the Board of Natural Resources and Conservation and to formulate a comprehensive, co-ordinated multiple-use state water plan (R.C.M. § 89-101 to 89-142). Other major amendments in 1974 and 1975 expanded upon the definition of beneficial use to exclude use of water to slurry coal (R.C.M. § 89-867(2), Amd. § 1, Ch. 192, L. 1974), placed an affirmative burden of proof upon applicants for 15 cfs. or more that any prior appropriations will not be adversely affected by granting of their request (R.C.M. § 89-885, Amd. § 1, Ch. 156, L. 1975), prohibited changing the use of agricultural water rights of 15 cfs. or more to industrial use (R.C.M. § 89-892, Amd. § 1, Ch. 338, L. 1975), and modifying the power of the Board and Department in acting upon water right applications while placing the responsibility upon the district courts, instead of the Department for issuing orders requiring claimants of existing water rights to file declarations (S.B. 395, Ch. 485, L. 1975).

In spite of the changes that have taken place in the laws, Professor Stone very correctly points out this is not the panacea to all the problems:

> People tend to think that although the law may be slow to act, nevertheless the law ultimately has an answer--a solution that is final and conclusive. In the field of water law, this feeling, or impression, has been induced and confirmed by some writers on water law and by some parts of court decisions taken out of context. A brief review of some of these causes of incomprehension may be of aid in understanding the legislative complacency in this area of law, for a legislature, like people, can evidently be lulled by a sense of legal security which really does not exist at all (Stone, 1973, p. 57).

He thereafter proceeds to illustrate three distinct issues--ascertainments of existing rights, permitting of new rights, and administrative not judicial administration of water resources--which the constitution and statutory amendments only make *vulnerable* to solution by water users and administrators, and not the solution to the issues.

6.2 SUBSTANTIVE LAW

6.2.1 *Property Right in Water*

In 1905, the Montana Supreme Court declared that ownership of the water of the State is in the people of the State (*Norman v. Corbley*, 32 Mont. 195, 79 P. 1059, 1905). The constitutional amendment of 1972 explicitly declared:

> All surface, underground, flood, and atmospheric waters within the boundaries of the state are the property of the state for the use of its people and are subject to appropriation for beneficial uses as provided by law (Montana State Constitution, Art. IX, Section 3).

The essence of this statement was also included in the 1973 Water Use Act (R.C.M. § 89-866(1)).

As provided by judicial and legislative recognition of customary practices, water in Montana is allocated and distributed under the doctrine or prior appropriation. Changes in the early 1970's altered the mechanisms implementing the doctrine and streamlined many provisions that were not consistent with current and projected needs. One of the key issues concerns the status of water rights that were acquired prior to introduction of the permit sysytem in 1973. Since the majority of Montana's water is allocated under the previous system, these rights had to be protected. This was done in the 1972 amendment to the constitution, which states:

> (1) All existing rights to the use of any waters for any useful or beneficial purpose are hereby recognized and confirmed (*Ibid.*).

The right which an appropriator gains is a private property right, subject to ownership and disposition by him (*Osnes Livestock Co. v. Warren*, 103 Mont. 284, 62 P.2d 206, 1936). However, private rights of ownership do not attach to the corpus of the waters as long as it remains in the stream in its natural state (*Custer v. Missoula Public Services Co.*, 91 Mont. 136, 6 P.2d131, 1931; *Mettler v. Ames Realty Co.*, 61 Mont. 152, 201 P. 702, 1921). The right to take water from a public stream into private possession is strictly a usufructuary right (*Brennan v. Jones*, 101 Mont. 550, 55 P. 2d697, 1936).

An appropriative right is in the nature of real estate insofar as a conveyance of the usufruct is concerned (*Middle Creek Ditch Co. v. Henry*, 15 Mont. 558, P. 2d 1054, 1895), but ascertainment of the extent and priority of a usufructuary right is in the nature of an action to quit title in real estate (*Whitcomb v. Murphy*, 94 Mont. 562, 23 P. 2d 980, 1933). When considered for taxation purposes, it is personal property (Brady Irr. Co. v. Teton County, 102 Mont. 330, 85 P. 2d 350, 1938).

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[3] See the *Proceedings: Symposium or Water Law and its Relationship to the Economic Development of Montana Water Resources*, ed. Helmer Holje, Water Resource Research Center, Montana University Joint, Bozeman, Montana, 1971, for presentations and discussions.

[4] The 1972 Constitutional amendment declared:

> The use of all water that is now or may hereafter be appropriated for sale, rent, distribution, or other beneficial use, the right of way over the lands of others for all ditches, drains, flumes, canals, and aqueducts necessarily used in connection therewith, and the sites for reservoirs necessary for collecting and storing water shall be held to be a public use.

(Montana Constitution, Article IX, Section 3).

A water right is a property right and may be sold and transferred. Where the right is appurtenant to land, the water right may be transferred with a conveyance of the land or transferred separately (Osmes Livestock Co. v. Warren, 103 Mont. 284, 62 P. 2d 206, 1936).

6.2.2 Acquisition of Right

The method of acquiring water rights followed traditional diversion, application to beneficial use, and posting of notice prior to the passage of the Water Resources Act in 1973. After 1973, however, the exclusive method of acquiring a water right is the statutory method of filing for a permit. Water may be appropriated only for beneficial use. The right to appropriate water may not be acquired by any other method, including adverse possession, adverse use, prescriptive use, or estoppel (R.C.M. § 89-880).

The priority of the appropriation attaches to the date of the filing of an application for a permit with the Department of Natural Resources and Conservation. The exception to this is permits where controlled ground water areas are considered. In these cases, notice of completion of the well is the date of priority (R.C.M. §89-891). As between competing users, the earlier priority date grants a senior right to divert (R.C.M. § 89-891).

Upon receipt of an application for a permit, the Department is to prepare a notice containing the facts pertinent to the application. This notice is to be published in a newspaper of general circulation in the area affected once a weeek for three consecutive weeks. Notice is served on any appropriator of water or applicant for a permit according to the records of the Department of Natural Resources and Conservation. Notice is also served on any public agency which has reserved water from the source in question. Notice may, in the Department's discretion, be served on any state agency or individual the Department feels may be interested in or affected by the proposed appropriation.

Objections may be filed to the appropriation. These objections must state the name and address of the objector and criteria for stating that there is no unappropriated water for the proposed permit. Such criteria include considerations that the proposed means of appropriation are inadequate; that property rights or interests would be adversely affected by the proposed appropriation; or any other objections to the proposed appropriation the objector considers to be pertinent. If the objection is determined to be valid a public hearing is held within sixty days of receipt of the objection. This occurs after notice of the hearing has been served to the applicant and the objector. If more than one objection is filed, the hearing may be consolidated (R.C.M. § 89-881 through 89-883).

After the application has been received, the Department is required to grant, deny, or approve the application in part within 120 days after the last day of notice publication of the application. This is extended to 180 days if a hearing is held. No modification of the application may be instituted by the Department unless the applicant is first granted an opportunity to be heard. If the Department seeks to modify an application, its opinion and the reasons therefore are mailed to the applicant. This statement informs the applicant that a hearing is available by requesting one within 30 days after the statement was mailed. If no request for a hearing is received, the application is modified in a specified manner, or denied unless a hearing is requested.

The Department is required to issue a permit if the following criteria are satisfied:

(1) there are unappropriated waters in the source of supply;
(2) the rights of prior appropriation will not be adversely affected;
(3) the proposed means of diversion or construction are adequate;
(4) the proposed use is a beneficial use;
(5) the proposal will not interfere unreasonably with other planned uses or developments for which either a permit has been issued or for which water has been reserved.
(6) an applicant for an appropriation of 15 cubic feet per second or more proves by clear and convincing evidence that the rights of a prior appropriator will not be adversely affected (R.C.M. § 89-892).

The Department may issue permits for less than the amount of water requested, but not for more than the request. Also, it may not issue permits for more water than can be beneficially used without waste. The Department may require modification of plans and specifications for the appropriation or of a later diversion or construction. It may issue a permit subject to terms, conditions, restrictions, and limitations it considers necessary to protect the rights of other appropriators. It may also issue temporary or seasonal permits. Permits are issued subject to existing rights and any final determination of those rights is made under the Water Resources Act (R.C.M. § 89-866).

Upon completion of the diversion works and actual application of water to the proposed beneficial use within the time permitted by the permit, the permit holder is required to notify the Department. The Department will then inspect the appropriation. If it determines that the appropriation and diversion have been completed in substantial compliance with the permit, it issues a certificate of a water right (R.C.M. § 89-888).

As with a water right, the construction of diversion works, implements, withdrawal or distribution works may only commence after receipt of a permit from the Department of Natural Resources and Conservation. The one exception concerns areas outside the boundaries of controlled ground water areas. In such areas, a permit is not required for appropriating ground water by means of a well provided that the well has a maximum yield of less than 100 gallons per minute (R.C.M. § 89-880 (4)). Within sixty days of completion of the well, the appropriator must file notice of completion with the Department and with the Office of the County Clerk and Recorder. Upon receipt of this notice, the Department automatically issues a certificate of a water right.

Ground Water--

Ground water is defined in Montana as any fresh water beneath either the land or the bed of a stream, lake, reservoir, or other body of surface water which is not part of surface water. Beneficial use, when used in the context of ground water, means the use of water for the benefit of the appropriator, other persons of the public, including but not limited to: agricultural (including stock water), domestic, fish and wildlife, industrial, irrigation, mining, municipal, power and recreation uses. It is significant to note the *exclusion* of slurry water. Apparently, the legislature had decided that slurry systems must be by surface water only (R.C.M. § 89-2911).

Any person claiming a right to withdraw ground water, whether or not from a controlled area, may request a hearing. The Department of Natural Resources and Conservation may also initiate a hearing to ascertain all existing rights to the use of ground water in the area or sub-area involved.

If the area involved is in a controlled ground water area, or sub-area where oil and gas wells produce either fresh, brackish, or saline waters, such production of water shall be under the prior jurisdiction of the Board of Oil and Gas Conservation. The hearings pertaining to the production, use, and disposal of water in those wells will be held by the Board of Natural Resources and Conservation in accordance with the procedures established by the Board of Oil and Gas Conservation.

Prior to a hearing before the Board of Natural Resources and Conservation, notice must be given by publication in a general circulation newspaper for three weeks. Further, a copy of the notice of the hearing and of the proposal will be mailed to each person involved in the petition.

In a hearing to ascertain the priorities of use for ground water, the Department of Natural Resources and Conservation may either confirm, modify, alter or amend any prior order designating and modifying the boundaries of the ground water area or sub-area involved. It will also determine the priority of rights, and the quantity of ground water to which each appropriator is entitled in a particular ground water area or sub-area. It may also determine the minimum level of ground water to be appropriated (R.C.M. § 89-2917).

Designation of an area for controlled ground water use may be initiated by the Department or by petition of at least 20 (or ¼, whichever is less) ground water users in a ground water area. A factual showing of the following is necessary: 1) that the ground water withdrawals are in excess of recharge to the aquifer or aquifers within such ground water area; 2) that excessive ground water withdrawals are very likely to occur within the near future because of significant increases in withdrawal from the ground water area; or 3) that significant disputes regarding priority of rights, amounts of ground water in use by appropriators, or priority of types of use are in progress within the ground water area.

When such a proposal is made, the Department will fix a time and place for a hearing. This hearing will not be less than thirty days from the time of a proposal. The notice of a hearing shall contain the names of the petitioners, the description by legal subdivision of all lands within the ground water area or sub-area, the purpose of the hearings, and the time and place of the hearing where any interested party may appear and file objections (R.C.M. § 89-2914).

If, after hearing all the evidence, the Board is convinced that annual withdrawal exceeds annual recharge, it shall order the total withdrawal of ground water from such an area or sub-area to be decreased so as not to exceed annual yield. Except for domestic uses, this decrease will follow the lines of priorities (R.C.M. § 89-2915).

Once an area is designated a controlled area, an appropriation may only be obtained by applying for and receiving a permit from the Department in accordance with the Water Use Act. The Department may not grant a permit if withdrawal is beyond the capacity of the aquifer, in the ground water area, to yield ground water within reasonable pumping lifts, or within reasonable, reduction of artesian pressures (R.C.M. § 89-2918).

Prescriptive Water Rights--

Formerly water rights in Montana could be acquired through prescription. Adverse use had to be continuous, exclusive, and an open invasion of another's rights for a period of five years (*Irion v. Hyde*, 107 Mont. 84, 81 P. 2d 353, 1938). However, the 1973 act now precludes this possibility (R.C.M. § 89-880).

Preferences--

Montana has no statutory system of preferences for water uses.

6.2.3. Adjudicating Water Rights

To facilitate its task, the Department of Natural Resources and Conservation is permitted to select and specify an area or source where the need for the determination of existing rights is most urgent. The Department may then begin proceedings to determine rights in such areas (R.C.M. § 89-870).

The procedure for determining existing rights begins with an order from the Department of Natural Resources and Conservation requiring each person who claims a right within the specified area (or from a specified source) to file a declaration of the right within one year of the order. Notice of the order is published once a week for three consecutive weeks in a newspaper of general circulation in the area to be affected. The Department must serve a copy of the order on each appropriator, or the appropriator's successor in interest, within the area.

After gathering all necessary data, the Department is to file a petition in the District Court of the judicial district within which the area is located. If there are more than two judicial districts involved within the area, each district court is to be notified of the intent to file a petition. The judges of those courts are then to agree upon which judge shall hear the petition within thirty days after receipt of the notice (R.C.M. § 89-873 (1) and (2), 89-881). The petition states the names of persons who appear from the data gathered by the Department, claiming to have rights to the use of water in the area in question.

Within a reasonable time after filing the petition, the District Court is to issue a preliminary decree based on the data submitted with the petition and other data obtained by the court. This decree is to be sent to each party to the petition for inspection (R.C.M. §89-875 (1) and (3)).

Either the Department or a party to the petition may, for good cause, object to the preliminary decree. Upon such objection, those involved are entitled to a hearing before the District Court. This hearing must be requested ninety days after the receipt of the preliminary decree. This time, however, may be extended for good cause. The court, either on the basis of the preliminary decree or any hearing that may have been held, shall enter a final decree either affirming or modifying the preliminary decree. If no request for hearing is filed within the time allotted, the preliminary decree becomes final automatically. The final decree establishes the existing rights and priorities of persons named in the petition for the source or area under consideration (R.C.M. § 89-876 and 877).

Appeals from this final decree may be had by persons whose existing rights are determined in that final decree, but only if he has requested a hearing and appeared and entered objections to the preliminary decree, or his rights as determined in the preliminary decree were altered as a result of the hearing at which he appeared requested by another person (R.C.M. § 89-878).

When the final decree is entered, the court sends a copy to the Department of Natural Resources and Conservation, which shall issue appropriate certificates of water rights. This certificate is sent to the County Clerk and Recorder, where the point of diversion or place of use is located. After recordation it is sent to the person to whom the right is decreed (R.C.M. § 89-878 and 879).

One of the major problems in Montana is determining the status of existing water rights. Under previous posting and filing of notice laws, the water rights were recorded with the county clerk (R.C.M. § 89-810, 1949). This causes many problems over diversions on inter-county streams. Further, failure to post notice doesn't invalidate the rights, it merely prevents the doctrine of relation back from establishing a priority date as of the date of posting notice.

This lack of adequate records creates uncertainty as to the value and status of early water rights. Prior to the Montana Water Use Act, the most significant attempt to record water right ownership was in 1967. The law required county clerks to inform the Department of Natural Resources and Conservation of all water right transfers. The system was not very effective.[5]

Under the 1973 Act, the Department must maintain a centralized record system of all water rights. Thus, post-1973 water rights are of record and only those pre-1973 in adjudicated areas will be of accurate record.

It is interesting to note that even though the lack of adequate records on water rights was considered a significant problem by the 1973 legislature, their solution to the pre-1973 problem may in itself become a problem in the future. Although the transferree is required to notify the Department of the ownership change by submitting a transfer form (R.C.M. § 89-893), no penalty exists for non-compliance. The records of Montana will become as inaccurate as those of its neighboring states in time.

6.2.4 Conditions of Use

Beneficial Use--

During the past decade, Montana water law has changed significantly in an effort to achieve progressive legislation that will enable optimum use of the State's water resources through efficient and effective management. The one critical element of each state's water laws which can facilitate or hinder this effort is the concept of beneficial use, its definition and the state's ability to enforce it.

The 1973 Water Use Act defines beneficial use as:

> a use of water for the benefit of the appropriator, other persons, or the public, including, but not limited to, agricultural (including stock water), domestic, fish and wildlife, industrial, irrigation, mining, municipal power, and recreational uses; provided, however, that a use of water for slurry to export coal from Montana is not a beneficial use. Slurry is a mixture of water and insoluble matter (R.C.M. § 89-867 (2)).

This is not to be interpreted as only applying to the type of use made of water. Legislative policy declarations speak both of promoting beneficial use and protecting beneficial uses:

> (1) The general welfare of the people of Montana, in view of the state's population growth and expanding economy, requires that water resources of the state be put to *optimum beneficial use* and not wasted.
> (2) The public policy of the state is to promote the conservation, development, and *beneficial use* of the state's water resources to secure maximum economic and social prosperity for its citizens.
> (3) The state, in the exercise of its sovereign power, acting through the department of natural resources and conservation shall co-ordinate the development and use of the water resources of the state so as to effect full utilization, conservation and protection of its water resources.
> (4) The development and utilization of water resources, and the efficient economic distribution thereof, are vital to the people in order to protect existing uses and to assure adequate future supplies for domestic, industrial and other *beneficial uses* (R.C.M. § 89-101.2 emphasis added, policy statement from Water Resources Act).

> (1) Pursuant to article IX of the Montana consitution, the legislature declares that any use of water is a public use, and that the waters within the state are the property of the state for the use of its people and are subject to appropriation for *beneficial use* as provided in this act.
> (2) A purpose of this act is to implement article IX, section 3(4) of the Montana constitution, which requires that the legislature provide for the administration, control, and regulation of water rights and establish a system of centralized records recognizing and establishing all water rights is essential for the documentation, protection, preservation and future beneficial use and development of Montana's water for the state and its citizens, and for the continued development and completion of the comprehensive state water plan.
> (3) It is the policy of this state and a purpose of this act to encourage the wise use of the state's water resources by making them available for appropriation consistent with this act, and to provide for the wise utilization, development,

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[5] Information on the recording of water rights prior to and since 1973 was obtained by correspondence dated May 19, 1975, from the Chief of the Water Rights Bureau, Dept. of Natural Resources and Conservation, to this report's author.

> and conservation of the waters of the state for the maximum benefits of its people with the least possible degradation of the natural aquatic ecosystems. In pursuit of this policy, the state encourages the development of facilities which store and conserve waters for *beneficial use*, for the maximization of the use of those waters in Montana, for the stabilization of stream flows, and for ground water recharge (R.C.M. § 89-866, emphasis added, policy statement of 1973 Water Use Act).

Beneficial use defines the types of purposes for which water may be appropriated and establishes the requirements of efficiency. The right of an appropriator is limited to an amount which he reasonably needs and uses over a reasonable period of time (*Federal Land Bank v. Morris*, 112 Mont. 445, 116 P.2d 1007, 1941). Subsequent appropriators can compel a prior appropriator to release water for their use which he does not need for a beneficial use (*Gans and Klein Investment Co. v. Sanford*, 91 Mont. 512, 8 P.2d 808).

In the absence of statutes which regulate the amount of water which is reasonably necessary for irrigation the courts allow "one inch per acre" in fixing an amount required for economical use (*Worden v. Alexander*, 108 Mont. 208, 90 P.2d 160, 1939). Thus the rights of an appropriator are measured by the beneficial use standard and the amount which can be used over reasonable periods (*Irion v. Hyde*, 107 Mont. 84, 81 P.2d 353, 1938).

Waste--
Prior to the 1975 water act, there were several judicial pronouncements on the prevention of waste, which set the tone for subsequent legislation. In *Power v. Switzer* (21 Mont. 523, 55 P. 32, 1898), the Montana Supreme Court laid down the rule that no appropriation of water is valid where the water simply goes to waste, and an appropriator who diverts more than is needed for his actual requirements and allows the excess to go to waste acquires no right in the excess. In fact, the appropriation of water does not include a right to let water run to waste to the detriment of other users (*Custer v. Missoula Public Service Co.*, 91 Mont. 136, 6 P.2d 131, 1931). The right is limited to that amount actually needed by the user (*Cook v. Hudson*, 110 Mont. 263, 103 P.2d 137, 1940).

Montana's legislature defined waste in 1973 as:

> The unreasonable loss of water through the design or negligent operation of an appropriation or water distribution facility, or the application of water to anything but a beneficial use (R.C.M. § 89-867 (10)).

Pursuant to the policies of water use outlined above, if the Department of Natural Resources and Conservation determines that a person is wasting water, or using water unlawfully, or preventing water from moving to another person having a prior right to use the same, it may petition the district court to regulate the controlling works of the appropriator to prevent the waste or unlawful use of water or order the person wasting or unlawfully using or interfering with another's rightful use of water to cease and desist from doing so and to take such steps as may be necessary to remedy the waste (R.C.M. § 89-897(1)). In the alternative, the Department directs its own attorney or requests the attorney general or county attorney to bring suit to enjoin the waste, unlawful use or interference (*Ibid.*, (2)).

This approach to controlling waste of water has the distinct disadvantage of giving the appropriator wasting or misappropriating water all the advantages of legal procedure. The procedural delays possible and conditions necessary to initiate a successful action may make this waste provision impossible for the Department to implement or at least cause frustration among its personnel.

Waste and Contamination of Ground Water--
Appropriative rights allow a specific quantity of water for beneficial uses and do not relate to water levels, ease of withdrawal or means of use (R.C.M. § 89-2912). Beneficial use is the extent and limit of the right and is defined as any economically or socially justifiable withdrawal or utilization of water (R.C.M. § 89-2911). The Department of Natural Resources and Conservation may hold a hearing on its own motion or on a petition signed by representatives of ground water users in any area or sub-area to determine if the water supply within an area or subarea is being appropriately used (R.C.M. § 89-2926).

The Department may require wells contaminating other waters to be plugged or capped. It may also require all flowing wells to be capped or equipped with valves so that water flow may be stopped when the water is not being put to beneficial use. Similarly, both flowing and non-flowing wells are to be constructed and maintained so as to prevent the waste contamination or pollution of ground waters because of leaky casings, pipe fittings, valves, pumps, either below or above the surface of the land.

The following do not constitute waste: 1) the withdrawal of reasonable quantities of ground water in connection with the construction, development, testing, or repair of a well or other means of withdrawal of ground water; 2) the inadvertent loss of ground water due to breakage of a pump, valve, pipe or fitting if reasonable diligence is shown by the person in effecting the necessary repair; 3) the disposal of ground water without further beneficial use that must be withdrawn for the sole purpose of improving or preserving the utility of land by drainage of the same, or that removed from a mine to permit mining operations to preserve the mine in good condition; 4) the disposal of ground water used in connection with production or reduction, smelting and milling metallic ores and industrial minerals, or that displaced from an aquifer by storage of other mineral resources.

6.2.5 Manner in Which Rights May Be Adversely Affected

Abandonment and Forfeiture--
Montana is one of the Western States which has incorporated the two distinct methods of losing a water right--abandonment and forfeiture--into one statutory provision, without distinguishing terms. According to the 1973 Water Use Act, if an appropriator ceases to use all or part of an appropriation right, *with the intention* of wholly or partially abandoning the right, or if the appropriator ceases using the right according to its terms and conditions *with the intention* of not complying with those terms and conditions, the appropriation right shall be deemed abandoned and expire immediately (R.C.M. § 89-894(1)). This is consistent with early court decisions that have held before a water right will be deemed abandoned there must be an actual non-use coupled by an intent to abandon (*Irion v. Hyde*, 107 Mont. 84, 81 P.2d 353, 1938). Abandonment is a voluntary act of relinquishing possession and the intent to not resume the use for a beneficial use (*Osnes Livestock Co. v. Warren*, 103 Mont. 284, 62 P. 2d 206, 1936).

The next subsection in the statutes provides what is commonly referred to as statutory forfeiture. If an appropriator ceases to use all or part of an appropriation right for ten successive years (providing that water was available for use) there is a prima facie presumption that the appropriator has abandoned the right in whole or in part for the part not used (R.C.M. § 89-894).

The Department of Natural Resources and Conservation is the agency charged with the responsibility of having water rights declared abandoned (R.C.M. § 89-895). When the Department has reason to believe that an appropriator may have abandoned his appropriative right or when another appropriator in the opinion of the Department files a valid claim that he has been or will be injured by the resumption of a use of an appropriation alleged to have been abandoned, then the Department shall petition the District Court which determined the existing rights in the source of appropriation in question. The Court will then hold a hearing to determine whether the appropriation right has been abandoned.

Adverse Possession, Estoppel, Condemnation--
Prior to the 1973 Water Use Act, water rights could be acquired from other water right holders by adverse possession after 5 years, and by estoppel and condemnation. Recognizing the legal problems involved with these doctrines, the Montana legislative assembly adopted section R.C.M. § 89-880 in the Water Use Act of 1973 which provides that water rights can be acquired by following the permit procedure exclusively and not by adverse possession, prescription or estoppel.

Enforcement of Beneficial Use or Waste Concepts--
An appropriator is limited to the quantity of water specified in his permit that is being beneficially used and any unused water can be lost by forfeiture or abandonment. There may, however, be a problem of implementing the abandonment statute as pointed out above. The right of an appropriator is limited to an amount which can be reasonably used over a reasonable period of time (Federal Land Bank v. Morris, 112 Mont. 445, 116 P. 2d 206, 1936).

In 1973, with the reorganization of the State's water agencies and granting of power to administer and to an undetermined extent, manage, the state's waters for the public, the Board of Natural Resources and Conservation can adopt rules to carry out the intent of the Act to include installation of measuring devices (R.C.M. § 89-869). The Department of Natural Resources and Conservation is charged with the power and duty to carry out the rules adopted by the Board (R.C.M. § 89-868) and specifically to either petition the district court to regulate the controlling work or issue a cease and desist order, or to direct its own attorney general to bring suit to prevent unlawful use and waste of water (R.C.M. § 89-897). The law authorizes employees or agents of the Department to enter a water user's properties to carry out the intent of the Act (R.C.M. § 89-898).

Montana has an interesting provision regarding water distribution. The legislature charged the district courts with supervisory responsibility over the distribution of water among all appropriators including the supervision of all water commissioners (R.C.M. § 89-896). This places the courts in a direct and immediate role to resolve water use disputes.

6.2.6 Legal Incentives and Disincentive for More Efficient Water Use Practices

Irrigation Return Flow--
Water which has been appropriated may be turned into another stream and then reclaimed if the commingled water is not diminished in quality or quantity (R.C.M. § 89-804). If an appropriator diverts more water than he can use,he must return the surplus to the stream (R.C.M. § 89-805).

Where water has seeped from irrigation lands into a drainage ditch it is subject to appropriation (Wills v. Morris, 100 Mont. 514, P.2d 862, 1935). However, while return waters are in the possession of the appropriator he can recapture and reuse them (Rock Creek Ditch and Flume Co. v. Miller, 93 Mont. 248, 17 P.2d 1074, 1933).

Montana case law holds that a landowner cannot be compelled to continue conditions which result in waste of water or be prevented from draining his land in such a manner as to cut off the flow of waste water (Popham v. Holloron, 84 Mont. 442, 275 P. 1099, 1929).

In Newton v. Weiler (87 Mont. 164, 286 P. 133, 1930), the Montana Supreme Court held that a proprietor of land has the right to use the land as he sees fit and may change the flow of waste waters in the reasonable employment of his own property, subject to the limitation that the use is without malice or negligence.

Salvaged and Developed Waters--
The right to use salvaged and developed waters is governed by the rule that the person who makes such water available is entitled to its use. An individual who has invested time and money should be entitled to receive the fruits from that labor (Woodward v. Perkins, 116 Mont. 46, 147 P.2d 1016, 1944).

In Smith v. Duff (39 Mont. 382, 102 P. 984, 1909), the Montana Supreme Court held that persons who have developed a supply of water which is not a part of the waters of a creek and was not previously available for use have the first right to take and use the increase.

Provisions for Transfer of Water Rights and Diversions--
An appropriator may not change the place of diversion, place of use, purpose of use, or place of storage (R.C.M. § 89-8920) nor sever or sell a part of a water right for use on other lands or for other purposes (R.C.M. § 89-893 (3)) without receiving prior approval from the Department of Natural Resources and Conservation. The Department is instructed by statute to approve the proposed change if it determines that it will not adversely affect the rights of others. If the Department determines that the proposed change may adversely affect the rights of other people,or if an objection is filed by a person whose rights might be affected, a public hearing will be held on the proposal.

In the case of transfer in ownership of land with a water right, the right will automatically pass with the conveyance unless specifically exempted and either retained or transferred separately. For all instances of transfers of water rights, it is the responsibility of the person receiving the right to file with the Department a notice of transfer (R.C.M. § 89-893(2)). However, because there are no penalties for failure to file this notice, it can only be assumed that many transfers will occur unrecorded.

In 1975, the legislature amended the section providing for changes in water rights by prohibiting the change in purpose of use of an agricultural water right for 15 cfs or more to an industrial use (R.C.M. § 89-892 (3), H.B. 83, Ch. 338, L. 1975).

6.2.7 Water Disposal and Drainage

Prior to the 1973 legislative changes in the water laws, a landowner could capture diffused surface water on his property and apply them to his needs without regard to earlier priorities on the law of prior appropriation (Doney v. Beatty, 124 Mont. 41, 220 P.2d 77, 1950). It is not certain whether it was the intent of the legislature to change this rule by defining "water" to mean all water of the state, "regardless of its character or manner of occurrence"(R.C.M. § 89-867(1)) and subjecting such water to appropriation by permit.

This point is relevant in the context of a historical discussion of the Montana drainage laws. In 1903, the State Supreme Court noted that a landowner downstream on a channel carrying only diffused surface waters owned no easement to the upper proprietors (Campbell v. Flannery, 29 Mont. 246, 74 P. 450). Later, in Le Munyon v. Gallatin Valley Railroad (60 Mont. 517, 199 P. 915, 1921), the Montana Supreme Court clearly adopted the common-law rule, holding that the lower landowner owes no duty to the upper landowner to refrain from obstructing the flow upon his land. Each landowner can protect his lands from the flow of diffused waters by embankments or other means. As noted by Hutchins, Ellis and DeBraal (1974, p. 547), the Montana statement of the common law rule is substantially the same as the common enemy rule.

6.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

6.3.1 State Water Agencies

Montana has been attempting to achieve a satisfactory organizational scheme for handling water resources matters since 1965 when the Water Conservation Board was created and to perform the duties of the previous Office of State Engineer. In 1967 and 1971 there were further reorganizations to streamline the administrative process. The Water Resources Board, which was the former Water Conservation Board, was abolished and the present agency created--the Department of Natural Resources and Conservation (R.C.M. § 82A-1505). Within this Department is the Division of Water Resources, headed by an Administrator. In addition, there is a Board of Natural Resources and Conservation, presided over by a chairman. The Department is under the management of a Director.

The impetus for the 1971 reorganization was a constitutional amendment in 1969 and the Executive Reorganization Act of 1971 which contained the recommendations of the Commission on Executive Reorganization (Guze, 1972).

The reorganization that took place in 1971-72 still lacked the ability to administer the water rights under their fragmental existence of being recorded in the district courts and no central control over either allocation nor planning of future uses. Thus, in 1972, a constitutional amendment was adopted which stated:

> (4) The legislature shall provide for the administration, control, and regulation of water rights and shall establish a system of centralized records, in addition to the present system of local records (Montana

Const., Art. IX, Sec. 3). Pursuant to this declaration, the legislature directed that a centralized system for the administration, control, regulation, and recordation of water rights be established (R.C.M. § 89-866 (2)). This was necessary for the documentation, protection, preservation and future beneficial use and development of Montana's water (R.C.M. § 89-866 (2)).

To accomplish this centralization, the powers of the Department of Natural Resources and Conservation were greatly expanded. *Among the duties and powers given* to this department were to establish a centralized record system for existing water rights and to gather all data necessary for the proper understanding and determination of existing rights (R.C.M. § 89-870 repealed 1975 Supp.). No previous recordation of water rights in Montana had been effective. A recordation effort required the County Clerk and Recorders to inform the Montana Water Resources Board of water right transfers. Compliance, however, though statutory, was limited. Under the new act, the Department must be notified of any transfer of a water right. The person receiving interest in the right is responsible for submitting the proper transfer form (R.C.M. § 89-893). At this time, however, there are no penalties for non-compliance with the statute.

Other statutory duties of the Department under the 1973 Act will enable it to determine how, when and where Montana's waters are being utilized and the creation and enforcement of a permit system for water rights, which is now the exclusive method of obtaining an appropriated right, the ascertainment and practices of existing water rights, adjudication of streams, enforcing rules and regulations adopted by the Board regarding the use of water resources and cooperating, assisting and co-ordinating activities with federal, local and other state agencies in matters related to water. The Act was amended in 1975 to delete the power of the Board to adopt rules governing interim approval of water right changes, to direct the Department to cease action on applications not in good faith or showing bona fide intent to put the water to beneficial use, and expanding the jurisdiction of the district courts in finding claims to existing water rights (S.B. 395, Ch. 485, Mont. Session L. 1975).

When a conflict arises where existing rights have not been determined, the Department of Natural Resources and Conservation may, in its discretion, begin proceedings to determine existing rights. If the Department does not make determination of existing rights, the District Court may settle the controversy between the disputing parties (R.C.M. § 89-896 (1) and (2)). In a controversy between appropriators from a source which has been the subject of a general determination of existing rights the controversy shall be settled by the District Court which issued the final decree. The Court settlement of the controversy may not alter existing rights and priorities as established by the final decree. In cases involving permits issued by the Department, the Court may not amend the respective rights established by the permits or alter any terms unless the permits are inconsistent with or interfere with the rights and priorities established by the final decree. The order settling the controversy is to be attached to the final decree and filed with the Department (R.C.M. § 89-896 (3)).

6.3.2 Judicial Bodies

The District Courts in Montana have some control over the water distribution to appropriators. Their authority includes supervision of all water commissioners. Water Commissioners make appropriate distributions, keep records of them and report periodically to the court (R.C.M. § 89-1009). Interference with their duties could result in a court proceeding (R.C.M. § 89-1022).

6.3.3 Water Users and Their Organizational Structure

Districts--
Irrigation districts may be formed under Montana statutes 89-1201 to 89-1617 and are corporations with a public purpose. These districts may be organized if 60% of the land holders within a proposed area file a petition. Before a district can be organized a favorable report must be submitted by the Department to the district court who hears the petition (R.C.M. § 89-1201).

An irrigation district's power to the use and apportionment of water is set forth in chapter 16 (R.C.M. § 89-1601 to 1617). Section 89-1603 states that:

> Nothing herein contained shall be deemed to authorize the diversion of the waters of any river, creek, stream, canal, or ditch from its channel, to the detriment of any person or persons having an interest in such river, creek, stream, canal, or the waters therein.

Section 89-1606 provides that:

> The use of all water required for the irrigation of the land of any district formed under the provisions of this act, together with the rights of way for canals and ditches, sites for reservoir, and all property required in fully carrying out the provisions of this act, is hereby declared to be a public use, subject to the regulations and control of the state in the manner prescribed by law; provided, all water, the right to the use of which is acquired by the district under any contract with the United States, shall be distributed and apportioned by the district in accordance with the acts of Congress and rules and regulations of the secretary of the Interior, and the provisions of said contract in relation thereto.
>
> The board of commissioners shall apportion the water for irrigation among the lands in the district in a just and equitable manner, and the maximum amount apportioned to any land shall be the amount that can be beneficially used on said land, and such amount of water shall become and shall be appurtenant to the land, and inseparable from the same, but subject to reduction as hereinafter provided; provided, however, that any water owner of the district shall have the right to sell or assign for one season any of the water apportioned to him, and not required for use upon the land to which such water belongs; provided, all water, the right to the use of which is acquired by the district under any contract with the United States, shall be distributed and apportioned by the district in accordance with the acts of Congress, and rules and regulations of the secretary of the interior, and the provisions of said contract in relation thereto. (R.C.M. § 89-1607).

The board of commissioners must apportion waters in a just and equitable manner and not beyond an amount which can be beneficially used (R.C.M. § 89-1607). In the event of shortage the amount of water must be proportionately reduced (R.C.M. § 89-1608). Any surplus water can be sold or disposed of by the board (R.C.M. § 89-1609).

Whenever a majority of landowners who represent one-third of the proposed district desire to form a drainage district, they must file a petition in district court. Conservancy districts may be created under Montana statutes § 89-3401 to 89-3449. These districts are organized to provide for the conservation and development of Montana's water and land resources (R.C.M. § 89-3409). Montana is desirous of conserving water so that it may be utilized beneficially to its greatest extent. Conservancy districts are designed to directly benefit irrigated lands by stabilizing the flow of water in streams and increasing return flows.

The directors of such a district may withhold delivery of water if there are any delinquent payments and can allocate or reallocate unused water (R.C.M. § 89-3414).

6.4 POLLUTION CONTROL

The state or any political subdivision or agency thereof, or the United States, or any agency thereof, may apply to the Department of Natural Resources and Conservation to reserve water for existing or future beneficial use or to maintain a minimum flow, level, or quality of water throughout the year or at such periods or for such lengths of time as the Board designates (R.C.M. § 84-890).

On receiving such an application, the Department of Natural Resources and Conservation shall proceed to process the application, as set forth above. After a public hearing is held on the matter, the Board shall decide whether or not to reserve the water for the applicant. The Board may not adopt an order reserving the water unless the applicant established to the satisfaction of the Board:

a) the purpose of the reservation,
b) the need for the reservation,
c) the amount of water necessary for the purposes of the reservation,
d) that the reservation is in the public interest.

If the purpose of the reservation requires construction of a storage or diversion facility, the applicant shall establish to the satisfaction of the Board that there will be progress toward completion of the facility and accomplishment of the purpose with reasonable diligence in accordance with an established plan.

What is meant by the public interest is unclear, and is not defined in the definition section of the statute. But it is worth noting that the policy of the Montana legislature recognized the preservation of ecosystems.

Regarding the control of pollution to water resources, this function is assigned to the Montana Department of Health and Environmental Sciences. Under the 1947 Water Pollution Control Act of Montana, as amended (R.C.M. § 69-4801 to 4827) and the 1971 Montana Environmental Quality Act (R.C.M. § 69-6501 to 6517), this Department has authority to prevent and abate pollution to the state's waters that affect the public health.

One year later, the Montana Pollutant Discharge Elimination System (M.P.D.E.S.) was adopted and approved by the Environmental Protection Agency. The M.P.D.E.S. requirements are applicable to irrigation return flows to the extent that they are included under the national permit system administered by E.P.A. (M.A.C. § 16-2.14(10)-S14460, 4(d)).

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APPENDIX A REPORT 7

NEBRASKA

7.1 HISTORICAL BACKGROUND

Nebraska is a state of 110,540 square miles, receiving an annual acreage of 22 inches of precipitation. Surface water runoff leaves the state primarily through several major rivers, the Platte, Niobrara, Big Blue and Republican (Geraghty, 1973). In addition to surface flows, the state has extensive ground water supplies, contained in narrow aquifers contiguous to the streams and rivers, and in widespread unconsolidated and semi-consolidated aquifers. The state, which claims the fastest growth of irrigated acreage from 1970 to 1975 (Sheffield, 1975), increasing its irrigated acreage from 3,490,000 acres in 1965 to 4,430,000 in 1970, to 5,340,000 in 1974 (Irrigation Survey, 1974) attributes a significant portion of land brought under cultivation to the vast ground water supplies. From 1965 to 1974, sprinkler irrigation has increased from 320,000 acres to 1,498,000 acres. According to the Director, Dept. of Water Resources, as of mid-1976 the total irrigated acreage has increased to 6.2 million acres, with 1.2 million acres irrigated from surface supplies and the remaining 5 million acres requiring ground water (Interview with Marion Bell, Director, by G. V. Skogerboe on June 28, 1976).

Given a slightly larger precipitation rate than its neighboring states to the North and West and with greater similarity in rainfall and water supply conditions to its neighbors to the East and South, at least for the southeastern part of the state, Nebraska's early water law as recognized by the courts followed the riparian doctrine. The state in 1903 refused to make the absolute switch from the riparian doctrine to the appropriation system because of the diversity of conditions that existed in the state (Meng v. Coffee, 67 Neb. 500, 93 N.W. 713, 1903). The first decision contrary to the riparian rights doctrine came in Cline v. Stock (71 Neb. 79, 102 N.W. 265, 1905). In this case, the court held that a prior riparian could not enjoin a subsequent appropriator from diverting water from a stream. The major movement away from the riparian rights doctrine came in McCook Irrigation and Water Power Co. v. Crews (70 Neb. 115, 102 N.W. 249, 1905). In its decision, the court held that a prior appropriator could enjoin a subsequent riparian and, in dicta, that a subsequent appropriator could probably enjoin a prior riparian. A suit for damages was the sole recourse for the injured riparian owner. Riparians were forced to obtain appropriation permits if they desired to secure their water supply.

As early as 1877, the right to appropriate water by diversion and application to a beneficial use was impliedly recognized (Neb. Laws, 1877, 168). The riparian theory is totally misplaced when applied to the western part of Nebraska, which is arid and largely dependent upon irrigation to sustain its agricultural economy. In 1889, the Raynor Irrigation Law (Neb. Comp. Stat. 1899 Ch. 93a, art. I, sec. 1) recognized appropriation for specific water courses and stated that for "all streams not more than fifty feet in width, the rights of the riparian appropriators are not effected." It would seem, therefore, that all riparian rights were abrogated except on very small streams. The riparian rights still in existence in Nebraska are governed by the following rules: stream flow can be used only on riparian lands and such lands are limited to those obtained under an original patent from the government. Domestic uses for which the entire flow may be diverted are limited to drinking, cooking and watering stock (Crawford Co. v. Hathaw, 67 Neb. 325, 93 N.W. 781, 1903). To secure a riparian right, the land must have been in private ownership before 1895 (Wasserburger v. Coffee, 180 Neb. 149, 141 N.W. 2d738, 1966).[1] The reasonable use is a question of fact which must be determined by a consideration of all the circumstances. Opposite riparians own the beds of all streams to the center or thread and the beds of lakes to the center (McBride v. Whitaker, 65 Neb. 137, 90 N.W. 966, 1903, U.S. v. Phillips, 56 F.2d 447 Neb., 1931). The legislature provided that anyone owning land on the banks could acquire a water right by putting the stream flow to a beneficial use (Neb. Comp. Stat. c. 93a, 1889).

As was stated earlier, the rights of riparians on streams less than fifty feet wide were not affected by the aforementioned act. This was later amended to apply to streams not more than twenty feet wide. A more comprehensive irrigation law was enacted in 1895 (Neb. Comp. Stat., 1895, §5440-76), and remains the basic surface water law for the state. This act created the administrative machinery necessary to administer waters of the state and to consider applications to appropriate water. The water of every stream not previously appropriated was declared to be the property of the public subject to appropriation for a beneficial use. Priority in time conferred a superior right. Domestic uses were accorded the highest preference.

The decision in Wasserburger v. Coffee (180 Neb. 149, 141 N.W. 2d 738, 1966), confronted the effects of the two appropriation statutes in Nebraska on used and unused riparian rights. In Wasserburger the plaintiffs, who were lower riparian owners, claimed stock-watering rights as against upper appropriators who diverted water under permits from the state. The dates of the early statutes were of particular importance in that the plaintiffs claimed ownership of their lands under patents dating March 27, 1889. The issue was whether the cut-off date for riparian rights was the 1889 act (1889, Ch. 93a, Art. §1), or the 1895 code (1895, §5440-76). The court concluded that the 1889 act failed to substitute the appropriation system for the riparian system and that riparian rights existed in connection with the patents issued after that date. The court went on to hold that a 1920 constitutional provision (Neb. Const. Art. XV, §4-6) which acknowledged and affirmed the existence of appropriation rights did not impair vested riparian rights which were acquired prior to 1895. The court, in balancing the interests of the parties, considered the following: the relative dates and priorities of both claimants; the social value attached by the law to both riparian and appropriation uses; the extent of harm to riparian owners; the practicality of avoiding harm to both claimants; and the suitability of the riparians use of the watercourse. The court held that the plaintiffs (riparians) were entitled to the injunction they sought. Wasserburger seemed to express the proposition that riparian rights could only be claimed in connection with land patented before 1895.

The atmosphere was clouded in 1969 by the decision in Brummund v. Vogel (184 Neb. 415, 168 N.W. 2d 24, 1969). In this case, the plaintiff, a lower riparian owner, sought an injunction against an upstream appropriator to enjoin him from constructing a dam which would have diminished the amount of water to the riparian for stockwatering. The plaintiff claimed no riparian rights with a pre-1895 grant and had not permit from the Department of Water Resources. Despite these facts, the court held that the plaintiff had riparian rights for a reasonable amount of water for domestic purposes (stockwatering) which were superior to the defendant's permit. Reliance was placed on a constitutional provision which gave preference to domestic uses (Neb. Const. Art. XV, §4-6). This case seems to be in direct contradiction to Wasserburger which had confined riparian rights to pre-1895 grants.

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[1] Yeutter, Clayton, A Legal-Economic Critique of Nebraska Watercourse Law, Dept. of Ag. Eco. Report No. 37, 1965.

As for ground water, early in Nebraska's history it appeared to follow the reasonable use theory with little regulation or control over extractions. This condition continued on into the early 1970's, with the exception of minor ground water legislation being enacted in the mid-1950's, and a significant ground water code being adopted in 1963 (N.R.S., §46-635 to 46-655). Still, a comprehensive ground water management code was not enacted until 1975, when Legislative Bill 577 was passed. This bill provides, for the first time, broad powers for controlling ground water pumpage. Enforcement of the law, of course, may be a different matter.

7.2 SUBSTANTIVE LAW

7.2.1 Property Right in Water

In Kirk v. State Board of Irrigation (90 Neb. 627, 134 N.W. 167, 1912), the Nebraska Supreme Court held that running water in the state is publici juris and its use is owned by the public subject to the controls of the state. The court stated that the state has a proprietary interest in the water of its streams and its beneficial use that the state may transfer the right to use or a qualified ownership subject to limitations and conditions.

Water which flows in a natural stream is not subject to private ownership. Any rights which do attach are strictly usufructuary rights to take the water from the stream into physical possession and applying it to a beneficial use. Private rights of ownership do not attach to the corpus of the water as long as it remains in the stream in its natural state (Meng v. Coffee, 67 Neb. 500, 93 N.W. 713, 1903). This usufructuary right is regarded as property and protected as such (Fairbury v. Fairbury Mill and Elevator Co., 123 Neb. 588, 243 N.W. 774, 1932).

A right is a power, privilege, faculty, or demand, inherent in one person and incident upon another--a power of free action (Black's Law Dictionary, 4th Edition). Coupled with every right is a corresponding duty. Duty as it relates to the use of water means a beneficial use. Thus, the term usufructuary is limited by defining one's corresponding duty to the water. The word duty is the correlative of a right. Whenever there exists a right, there must also be a corresponding duty upon some other persons or upon all persons generally.

The general rule is that one who diverts water under a valid right of diversion and use becomes the owner of the particles of the water. The right which an appropriator acquires is a private property right which he can dispose of as he would other private property (Crawford v. Hathaway, 67 Neb. 325, 93 N.W. 781, 1903).

7.2.2 Acquisition of Right

Surface--

Appropriative rights, basically, are governed by statute. An appropriation can be defined as a state administrative grant that allows the use of a specific quantity of water for a specific beneficial purpose if water is available in the source free from the claims of others with prior appropriations. The right is initiated by an application for a permit. The place of use is not restricted to riparian land or even to the watershed. The right may be sold and its use or place of use changed. It may cease to exist if it is not used (Trelease, 1974, p. 11).

> An appropriation of water flowing on the public domain consists in the capture, impounding, or diversion of it from its natural course of channel and its actual application to some beneficial use (Black's Law Dictionary, 4th Edition).

The appropriator is entitled to a continuing right to the use of such waters that have been appropriated, but not beyond that reasonably required and actually used (Arizona v. California, 565 Ct. 848, 298 U.S. 558).

To obtain a permit an application must be filed with the Department of Water Resources. The following information must be furnished to the Department by an appropriation applicant: name and address, the amount of water desired, the source, the location of the diversion works, estimated time of completion of the works, and the purpose of the appropriation. If the purpose is for irrigation, a description of the land and the amount of land to be irrigated must be included and an estimation of when the water can be applied for beneficial purposes (R.R.S.N. 46-233). The application is then recorded and is examined for patent defects. If found to be defective, the application is returned to the applicant who has thirty days in which to refile the application in order to retain the priority date of the original filing.

The applicant must file a map or plat with the Department which shows the point of diversion and all structures actually constructed or proposed within six months after the approval of the appropriation petition. If this procedure is not followed, the appropriation is forfeited (N.R.S. §46-237). Construction must begin within six months after approval of the application and must be pursued "vigorously, diligently and uninterrupted" (R.R.S.N. 46-238), and a report must be furnished to the Department within six months which shows the remaining work. At least one-tenth of the construction work must be completed within one year. When the water right is perfected it relates back to the date of the filing of the application.

Springs, tributary or natural surface watercourses are controlled by the same method as watercourses. A watercourse is defined as any depression or draw two feet below the surrounding lands having a continuous outlet to a stream of water, or river or brook (R.R. S.N. 31-202). The Nebraska Supreme Court has declared that a watercourse must be a stream; that there must be a definite channel flowing in a particular direction, although the flow need not be constant and it must have sides and banks (Pyle v. Richards, 17 Neb. 180, 22 N.W. 370, 1885; Jack v. Teegarden, 151 Neb. 309, 37 N.W. 2d 387, 1949). Watercourse law is applicable to both artificial streams (or drainage ditches) and natural streams flowing in natural or artificial channels (Neb. Laws c. 277, pp. 832-33, 1963). Therefore, the owner of lands upon which a spring is located cannot use or control those waters to the detriment of lower riparians or appropriators in possession of a valid permit (Brummund v. Vogel, 184 Neb. 415, 168 N.W. 2d24, 1969). Springs which do not form or contribute to a watercourse are treated as diffused surface waters. The owner of such a spring may change the course of the spring and keep the waters for his own use (Rogers v. Petsch, 174 Neb. 313, 117 N.W. 2d771, 1962).

The construction or maintenance of a reservoir must be preceded by the filing of an application with the Department of Water Resources (R.R.S.N. 46-241(i). Upon approval of the application, an applicant is authorized to impound waters which have not been appropriated or in need of immediate use (R.R.S.N. 46-241(1)). Reservoir owners are responsible for all damages which arise from breakage of dams, leakage and/or overflow (R.R.S.N. 46-241(2)). All dams must be inspected once a year by the Department of Water Resources (R.R.S.N. 46-277 and 278), who can require any repairs necessary to keep them safe (R.R.S.N. 46-277 and 278). Once the reservoir is complete, a separate application must be filed for a permit to place the stored waters to their intended use (R.R.S.M. 46-242).

Ground Water--
Ground water is defined as water which occurs (moves, seeps, filters, or percolates) through the ground under the surface of the land (R.R.S.N. 46-635). A permit is required to pump ground water from pits within fifty feet of the bank of any natural stream (R.R.S.N. 46-636). Ground water may be transported outside of the state if the Department determines that the withdrawal is reasonable, not contrary to principles of conservation or otherwise detrimental to the public welfare-- provided the foreign state will also grant reciprocal privileges to Nebraska (R.R.S.N. 46-613.01).

Ground water policy is set forth in Section 46-601, which states:

> The Legislature finds, recognizes and declares that the conservation of ground water and the beneficial use thereof are essential to the future well-being of this state. Complete information as to the occurrence and the use of ground water in the state is essential to the development of a sound ground water policy. The registration of all wells, except wells used solely for domestic purposes, in this state should be required.

Regulations regarding wells are set forth in Section 46-602, requiring that:

> (1) the owner of each well, except wells used solely for domestic purposes, completed in this state shall register such well with the director within thirty days after the completion of such well. Registration shall be in such form as the director may direct, and shall contain a statement of (a) the location of such well, (b) the date of its completion, (c) the intended use of such well, (d) the size of such well, (e) the actual capacity of such well expressed in gallons per minute, and (f) such additional information conformable to the statement of purpose contained in section 46-601 as the director might require; provided that all wells for which a permit has been or in the future is granted by the Department of Water Resources under sections 46-638 to 46-650, shall be exempt from the provisions of this section.
> (2) The registration, referred to in subsection (1) of this section, shall be in triplicate and it shall be accompanied by three copies of the certificate of the well driller required by section 46-603.
> (3) Whenever any owner of a registered well shall abandon such well, he shall properly plug or cap the same in accordance with the rules and regulations of the Department of Water Resources and within sixty days give written notice to the Department of Water Resources of such abandonment. When any owner of an abandoned well replaces such well he shall, within thirty days after the completion of such replacement well, give notice to the department by filing in the office of the department completed well registration and well driller certificate forms, in triplicate, for the replacement well. No fee shall be collected for filing notice of abandonment or for the registration of the replacement of a registered well.

Nebraska statutes provide for preferences in ground water use. Top priority in the use of underground water is given to domestic uses (R.R.S.N. 46-613). Domestic use of ground water means uses required for human needs as it relates to health, fire control, and sanitation and includes uses for domestic livestock as related to normal farm and ranch operations (R.R.S.N. 46-613).

In 1975, Legislative Bill 577 was enacted to attack the problem of ground water management. The provisions of this bill in conjunction with the creation of 24 Natural Resource Districts (NRD) covering the state of Nebraska (R.R.S.N. 2-3201 to 2-3272) places the state in good position to ultimately regulate and manage its ground water supplies. The NRD's through their local boards of directors and supervision by the State Natural Resources Commission, have fairly broad powers in planning and development of the land and water resources within their boundaries. L.B. 577 in conjunction with the NRD's, and administered by the Department of Water Resources, provides in summary (Sheffield, 1975):

1. Any unregistered well with a pumping capacity of 100 gpm can be shut down.
2. In areas with declining ground water levels, the NRD can recommend to the Department of Water Resources that the area be designated a control area. The Department must make a determination if such action is necessary, and if so, institute controls necessary.
3. In control areas, all new wells must first be granted for a permit and thereafter abide by rules of withdrawal for the area.
4. The Director of the Department of Water Resources can act to designate a control area if the NRD's fail to do so.
5. The NRD's must adopt rules to prohibit surface runoff of water derived from ground water irrigation. The NRD's can also determine the amount and time of ground water withdrawal, adopt rotation patterns of ground water use in the control area, adopt well spacing requirements and any other rules necessary to properly allocate, manage and administer the ground water in control areas.

Prescriptive Water Rights--Appropriation rights may be acquired by prescription when there has been an adverse continuous use for a period of ten years.

Preferences--When the water of any natural stream is not sufficient for the use of all those desiring the use of the same, those using the water for domestic purposes have preference over other uses and agricultural uses have preference over uses for manufacturing purposes (N.R.S.N. 46-204).

7.2.3 Adjudicating Water Rights

Adjudication procedure is established by statute which allows the Department of Water Resources to initiate an administrative proceeding in order to declare water rights forfeited for three years nonuse. All adjudications are final unless appealed. Water use conflicts are resolved in court by private parties, which is the chief means utilized in such resolution.

7.2.4 Conditions of Use

Beneficial Use--

Beneficial use is referred to indirectly in Nebraska Revised Statutes Section 46-204: "The right to divert unappropriated waters of every natural stream for beneficial use shall never be denied." It can, however, be considered the basis, the measure and the limit of the right to use appropriative waters. Priority of appropriation allows a superior right to divert as between those using the water for the same purposes.

It was decided In *Lackey V. Gering and Fort Laramie Irrigation District* (129 Neb. 48, 260 N.W. 568, 1935) that an appropriation is not complete until the water has been applied to beneficial use.

The duty of water from the natural flow of streams for irrigation is limited to 1 cfs/70a, and not more than 3 acre-feet each year for each acre of land (R.R.S.N. 46-231). The amount used is not to exceed the least amount of water that is necessary for the production of crops according to principles of good husbandry.

As previously discussed, the right to divert unappropriated waters from every stream for a beneficial use is not to be denied (R.R.S.N. 46-204). Restrictions are inapplicable to storage waters or to minor appropriations. Further, the above statute is inapplicable to those vested rights which were created prior to the statutes enactment (*Enterprise Irrigation District v. Willis*, 135 Neb. 827, 284 N.W. 236, 1939).

Prior to the first of April of each year, a list of all lands to be irrigated under each appropriation must be submitted to the Department of Water Resources. The purpose of this requirement is to insure that appropriators stay within the maximum quantity limitations prescribed by statute, to furnish the Department with evidence for subsequent forfeiture proceedings and to permit the Department to estimate potential use for the season which allows pre-planning to minimize waste (R.R.S.N. 46-262). Most irrigators circumvent the forfeiture potential by reporting the maximum acreage each year because the Department does not have the funds to insure that this reported acreage is actually irrigated (Dewsnup, *A Summary Digest of State Water Laws*).

The purpose of the law is to provide equity in the use of the water by riparian owners, by requiring each to exercise his rights reasonably and with due regard to the right of other riparian owners (*Meng v. Coffee*, 67 Neb. 500, 93 N.W. 713, 1903). The question of what constitutes reasonable use is to a large degree one fact: the condition of soil, climate and rainfall in any given locality. These conditions when proven may be considered elements of fact, without affecting the general rule. In determining whether an upper riparian's use of water for irrigation is reasonable, certain factors must be taken into consideration. These include: 1) the size, situation and character of the stream; 2) the uses to which its waters may be put by other riparian owners; 3) the season of the year; and 4) the nature of the region (*Ibid.*).

Certain activities, however, are clearly unreasonable. The upper owner, in using the water for irrigation, may neither waste, needlessly diminish, nor wholly consume it, to the injury of other owners. Furthermore, the upper owner may not prevent reasonable use of the waters by downstream users (*Ibid.*).

In *Farmer's Canal v. Frank* (72 Neb. 136, 100 N.W. 286, 1904), the court held that:

> It is the evident purpose of the law...to enforce and maintain a rigid economy in the use of the waters of the state. It...is the policy of the law in all the arid states...to require and enforce an economical use of the waters of the natural streams. The urgent necessities of the situation compel this policy by the very force of circumstances. One of the main objects of the system of administration of public waters prescribed throughout the arid regions is to restrain unnecessary waste, and to provide for an economic distribution of that element so necessary to the very existence of agriculture in those regions. This is also the policy of the state of Nebraska in its regulation of the use of the waters of the state, and the law should be construed so as to effect a reasonable, just and economic distribution of water for irrigation purposes. The court will take judicial notice of the fact that there are hundreds of acres within the state susceptible to irrigation to every acre which there is water enough to supply, and it is obvious that a construction of the law that will best distribute the use of the waters is to be preferred, if such construction is not inimical to any constitutional inhibitions or limitations.

Waste--

The waste of water can be considered as the opposite of using the water beneficially. Waste water is water running off irrigated lands which has not been consumed either through being absorbed into the soil or evaporated into the atmosphere. A fundamental goal of public policy in the field of water resources is to minimize the productivity, output, or efficiency--these are synonyms--of the nation's water resources. Maximum efficiency is achieved when all productive resources are being employed in their highest valued uses (Meyers and Posner, 1971, p. 2).

The owners of irrigation ditches or canals must return unused water from such ditch or canals to the stream from which such water was taken with as little waste as possible (R.R.S.N. 46-265). If an irrigator receives more water than he is entitled to, he must attempt to prevent such excessive distribution by notifying the owner of the canal which provides his water supply (R.R.S.N. 46-262).

7.2.5 Manner in Which Rights May Be Affected

Forfeiture and Abandonment--

An appropriation right may be lost in a number of ways: 1) abandonment, or intentional relinquishment of such right; 2) statutory forfeiture for nonuse regardless of intent; 3) nonuse of water rights for ten years is deemed to be a forfeiture, regardless of intent (State v. Nielsen, 163 Neb. 372, 79 N.W. 2d 721, 1956). If an appropriation has not been used for beneficial purpose the Department of Water Resources may, after a show of cause hearing, declare such appropriation forfeited. This is true of appropriations which have not been used for three years. Appeal of this decision is to the State Supreme Court.

The Department of Water Resources is to maintain surveillance of the condition of irrigation ditches and the condition of appropriations. If a forfeiture proceeding seems justified, the Department serves notice of the show cause hearing. The Department is not adequately funded to gather this information and conduct the hearings which are necessary to bring its permits up-to-date. It seems that the Department does not object to irrigators withdrawing quantities in excess of their appropriations so long as no other appropriator is thereby injured. This is justified on the grounds that existing surplus flows would be lost.

Adverse Possession--
In order to acquire a water rights by adverse possession, the use must be open, not rious and continuous for a period of 10 years (Oliver v. Thomas, 173 Neb. 36, 112, N.W. 2d 525, 1961).

Condemnation--
Condemnation is a process by which the property of a private owner is taken for public use but upon the payment of just compensation. Nebraska statutes declare that:

> All persons desirous of constructing a ditch, building a dam or dams for the purpose of storing water for irrigation, evaporation, and water power purposes, or conveying water to be applied to domestic, agricultural or any other beneficial use, or any dam, dike reservoir, wasteway, subterranean gallery, filtering wells or other works for collecting, cleansing, filtering, retaining, or storing water for any such use, or to enlarge any such ditch, conduit or waterworks, or to change the course thereof in any place, or to relocate the headgate or to change the point at which the water is to be taken into such canal or other waterworks, or to enlarge any ditch, canal or other works, or to construct any ditch, or to lay pipes or conduits for conveying or distributing water so collected or stored to the place of using the same, or to set, place or construct a wheel, pump, machine or apparatus for raising water out of any stream, lake, pond or well, so that the same may flow or be conveyed to the place of using or storing the same, and who shall be unable to agree with the owner or claimant of any lands necessary to be taken for the site of any such works or any part thereof, touching the compensation and damages, shall be entitled to condemn the right-of-way over or through the lands of others, for any and all such purposes (N.R.S. §46-246).

The Nebraska Supreme Court has held that the right of eminent domain cannot be exercised for purely private purposes, such as by an individual for irrigation of his own land (Vetter v. Broadhurst, 100 Nebr. 356, 160 N.W. 109, 1916).

Hickman v. Loup River Public Power District (173 Neb. 298, 113 N.W. 2d 195, 1962) provided that, where the owner of a superior right sought to acquire water which was being used for power purposes, eminent domain proceedings may be utilized.

Whenever the directors of an irrigation district vote to acquire and appropriate by the exercise of the power of eminent domain any water being used for power purposes, or whenever any person, firm, association, corporation or organization seeks to acquire any water being used for power purposes and shall be unable to agree with the user of such water for power purposes upon the compensation to be paid to such power user, the procedure to condemn property shall be exercised in the manner set forth in sections 76-704 to 76-724 (R.R.S.N. 70-672).

Enforcement of Beneficial Use or Waste Concepts--
An appropriator is limited to the quantity of water specified in his permit subject to a beneficial use and limited by the duty of water (R.R.S.N. 46-231). If the appropriator fails to apply the specified quantity in his permit to a beneficial use the unused water is subject to the provisions of the forfeiture statute.

7.2.6 Legal Incentives and Disincentives for More Efficient Water Use

Irrigation Return Flow--
A downstream senior appropriator is entitled to have the stream flow in a sufficient quantity to satisfy his appropriation. An upstream junior appropriator, therefore, cannot use water if that use would deprive the downstream senior of his appropriated quantity. In Cary v. Cochran (Cary v. Cochran, 138 Neb. 163, 292 N.W. 239, 1940), however, the court stated that, if all available water in the stream would be lost before its arrival at the headgate of the downstream canal, it would be an unjustified waste of water to attempt delivery.

Seepage is considered to be abandoned by the original appropriator when it is permitted to return to its natural channel if the appropriator has the requisite intent to abandon it. Recapture and reuse is permitted if the seepage waters have not been abandoned. Once abandoned, it can nevertheless be recaptured and reused if no new rights have been created in the interim (Ramshorn Ditch Co. v. U.S., 269 Fed. 80, 8th Circ., 1920). However, nonuse for a period of ten years is deemed to be a forfeiture regardless of intent. The Supreme Court in U.S. v. Haga (276 F. 41, D., 1921) stated that return flows are subject to appropriation downstream when they are abandoned.

Provisions for Transfer of Water Rights and Diversions--
There is nothing in the code which authorizes transfers of irrigation permits to other types of uses. The only dependable method of acquiring a water right is to purchase the land to which the permit attaches (R.R.S.N. 46-233).[2]

The Nebraska legislature enacted laws which provided that all appropriations for irrigation which were made after 1895 are inseparably appurtenant to specific land. However, appropriative rights which were acquired before 1895 were not required to be attached to specific land and could be transferred or assigned for use on other property. Any change in the locational use of previously appropriated waters could after 1895 only be made under the permission and subject to the administrative control of state irrigation authorities (U.S. v. Tilley, 124 Fed. 2d 850, 8th Circ., 1920).

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[2] See Oeltjen, Harnsberger, Fischer, "Interbasin Transfers: Nebraska Law and Legend," Nebraska Law Review, 87, 1971.

7.2.7 Waste Water Disposal and Drainage

Disposal of Waste--
In Nichol v. Yochum (173 Neb. 298, 113 N.W. 2d 195, 1962), the Nebraska Supreme Court adopted the common enemy rule with regard to diffused surface waters. The following rules have been adopted regarding diffused surface waters: 1) Diffused surface waters may be collected by the landowner into a pond or by channeling the water into a natural drain, or the landowner may change the course of the diffused surface waters without liability to a lower landowner; 2) Diversion of such waters may not be onto lower lands except in draws, depressions, swales, or other drainageways through which such waters would have flowed by nature and once collected in natural drainageways the lower landowner may not dam, divert, or repel such waters without incurring liability to the upper landowner.[3]

> Owners of land may drain the same in the general course of natural drainage by constructing an open ditch or tile drain, discharging the water therefrom into any natural watercourse or into any natural depression or draw, whereby such water may be carried into some natural watercourse; and when such drain or ditch is wholly on the owner's land, he shall not be liable in damages therefor to any person or corporation (R.R.S.N. 31-201).

7.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

7.3.1 State Water Agencies

Responsibility for the administration of Nebraska's system of water laws is placed in the hands of the Department of Water Resources.[4] The Department may adopt procedural rules and conduct public hearings on petitions regarding applications for water rights. It also hears and settles complaints. Witnesses may be compelled to attend and the Department may take depositions and examine the books and records of affected parties. The primary object of the Department primary role is the supervision of the appropriation, distribution and diversion of water.

The Department of Water Resources acts upon all applications to store or appropriate water (R.R.S.N. 46-208 to 214). Applications will be approved if unappropriated water is available and if approval would not be detrimental to the public welfare (R.R.S.N. 46-235). Upon perfection of the water right, there is a relation back to the date the application was filed establishing its priority date (R.R.S.N. 46-205). Though the Department's authority is quasi-judicial in nature, it is not a judicial body exercising judicial functions (Crawford v. Hathaway, loc. cit.).

The Department must also determine and record permit priorities (on a "first in time first in right" basis) and determine the amount of appropriations which should not be more than the capacity of the diversion works.

7.3.2 Judicial Bodies

Nebraska has no special water courts. Department of Water Resources decisions are appealed to the Nebraska Supreme Court.

7.3.3 Water Users and Their Organizational Structure

Individuals--
To obtain an appropriative right, there must be an actual diversion (taking) of the water from a channel. An appropriation of the water consists in the capture, impounding, or diversion of it from its natural course or channel and its application to some beneficial use (Black's Law Dictionary, 4th edition). The appropriator is entitled to a continuing right in the use of waters that have been appropriated, not beyond that reasonably required and actually used (Arizona v. California, loc. cit.). An appropriation is an administrative grant allowing for the use of a quantity of water for a specific beneficial purpose.

The requirement that there must be an actual diversion (taking) relates to the need to perfect a property right and to obtain an exact measurement of the property. To observe one's "property" rights in the water an appropriator must not discontinue his use for three consecutive years. To protect this property right, an appropriator continues to divert and apply the appropriation to preserve that quantity of the appropriation. The result is the use of a greater quantity of water than is needed in order to preserve the property right in a quantity of water. Owners of an irrigation ditch or canal are required to return unused water with as little loss as possible to the stream from which such water was taken (R.R.S.N. 46-265).

Districts--
There are 24 multipurpose districts in Nebraska known as Natural Resources Districts (NRD). These districts are responsible for activities carried out by soil and water conservation districts, watershed districts, watershed planning boards, and adivsory watershed improvement boards (R.R.S.N. 2-3201 to 3262).[5]

The constitutionality of public irrigation districts was upheld in Board of Directors of Alfalfa Irrigation Districts v. Collins (46 Neb. 411, 64 N.W. 1086, 1895). Nebraska statutes also authorize the organization of reclamation districts (R.R.S.N. 46-501 to 587). Nonprofit mutual irrigation companies may also be organized and are authorized to issue bonds, borrow and mortgage their property and franchises (R.R.S.N. 46-269 to 587). Water users associations are sanctioned to contract with the Federal Government for reclamation funding (R.R.S.N. 46-272).

Sections 46-101 to 46-1.111 are noted to be construed so as not to repeal or in any way modify the provisions of any other law relating to the subject of irrigation or water commissioners. These sections do not authorize any person to divert the waters of any river, creek, stream, canal, or ditch from its channel to the detriment of any person having interest in such river, creek, stream, canal, or ditch, or any other waters of the state, unless previous compensation be discovered and paid for under the laws of the state which authorizes the taking of private property for public use (R.R.S.N. 46-159).

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[3] For an excellent discussion of diffused surface water law, see Yeutter, 1963).

[4] Trelease, Frank, J., "Reorganization of Water and Land Resources Agencies of the State of Nebraska--A Proposed Department of Natural Resources," 1969.

[5] See Radosevich and Skogerboe, 1977, Appendix A, Nebraska, Section 7.4.1 for discussions of NRD's.

Section 46-160 states that irrigation districts are liable in damages for negligence in delivering or failure to deliver water to the users from its canal to the same extent as private persons and corporations. Provided, such districts shall not be liable unless the party suffering damages by reason of negligence or failure shall within thirty days after the negligent acts are committed or such districts shall fail to deliver water, serve notice in writing to the chairman of the board of directors of the district, setting forth the acts which were committed or the failure of performance of the duties by the district. This notice must claim negligence or an omission by a statement that he expects to hold such district liable for those damages which may result. This action must be brought to the board within one year from the time the action occurred.

The purpose of reclamation districts is set forth in Section 46-501:

> It is hereby declared that to provide for the conservation of the water resources of the State of Nebraska and for the greatest beneficial use of water within the state, the organization of reclamation districts and the construction of works as herein defined by such districts are a public use and will: (1) be essentially for the public benefit and advantage of the people of the State of Nebraska; (2) indirectly benefit all industries of the state; (3) indirectly benefit the State of Nebraska in the increase of its taxable property valuation; (4) directly benefit municipalities by providing adequate supplies of water for domestic use; (5) directly benefit lands to be irrigated from works to be constructed; (6) directly benefit lands now under irrigation by stabilizing the flow of water in streams and by increasing flow and return flow of water to such streams by replenishing and maintaining subsurface supplies; and (7) promote the comfort, safety and welfare of the people of the State of Nebraska.

The policy relating to reclamation districts is set forth in Section 46-502:

> It is therefore declared to be the policy of the State of Nebraska to: (1) control, make use of and apply to beneficial use all available waters of this state to a direct and supplemental use of such waters for domestic, manufacturing, irrigation, power, and other beneficial uses; (2) obtain from water of the state the highest benefit for domestic uses and irrigation of lands in Nebraska; (3) cooperate with the United States government in the construction and financing of works in the State of Nebraska as herein defined and for the operation and maintenance thereof; and (4) promote the greater prosperity and general welfare of the people of the State of Nebraska by encouraging the organization of reclamation districts as provided in sections 46-501 to 46-573.

The county board of any county can locate and construct, straighten, widen, alter, or deepen any ditch, drain or watercourse, when it is necessary to drain any lots, lands, public or corporae road, or railroad, and when it will be conducive to the public health, convenience or welfare (R.R.S.N. 31-101).

7.4 POLLUTION CONTROL

The Environmental Protection Act (1971) established an environmental control council to control air, water and land pollution (R.R.S.N. 81-1501 to 1532). Administration is with the Department of Environmental Control which has the authority to adopt water quality standards for all waters within the state. A permit system has been established and a reasonable time is given polluters to comply with the water quality standards set by the Department.

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APPENDIX A REPORT 8

NEVADA

8.1 HISTORICAL BACKGROUND

Nevada is an arid state of 110,540 square miles receiving an average annual precipitation of 9 inches. Initially, water users diverted in the mid-1880's for mining purposes.[1] Then, as many miners became dissillusioned with their meager findings, they turned to irrigating lands near river beds. By 1905, there was little land left adjacent to watercourses to enable low cost irrigation, and the farmers had to turn to more sophisticated diversion and irrigation practices. Congress had just passed the Reclamation Act of 1902, and Nevada became the first State to have a project constructed under the new program--the Newlands Project near Fallon, Nevada.

Surface waters continued to be developed, but by 1950 water users began turning to ground waters since all surface waters were appropriated. In 1969 the total water withdrawals are estimated at 4.6 million acre-feet, which includes 490,000 acre-feet of ground water, a ten-fold increase since 1950. Of this total, approximately 3,330,000 acre-feet per year was diverted for agriculture, including about 330,000 acre-feet withdrawn from ground water. These diversions irrigated approximately 830,000 acres of land. However, due to the wide fluctuation in annual moisture, the total irrigated acres can range from 1,000,000 acres in a wet year to 600,000 acres in a dry year (*Water for Nevada*, Vol. 2, p. 15).

Given limited water resources, the State has been mindful of the need for proper and adequate control over water allocations and use since its admission into the Union in 1864. Presently, the appropriation doctrine is the exclusive doctrine governing the acquisition and use of water in Nevada. This doctrine was first recognized in 1866 when the Nevada Supreme Court applied the appropriation doctrine where the parties involved based their claims on prior right and the use of water (*Lobdell v. Simpson*, 2 Nev. 274, 1866).

The riparian doctrine was recognized briefly in Nevada (*Vansickle v. Haines*, 7 Nev. 249, 1872; *Dalton v. Bowker*, 8 Nev. 190, 1873; *Lake v. Tolles*, 8 Nev. 285, 1873). However, in 1885 the Nevada Supreme Court stated the riparian doctrine did not serve the needs and wants of the people of the area and that development could only be accomplished under the doctrine of prior appropriation (*Jones v. Adams*, 19 Nev. 78, 6 P. 442, 1885). The court expressly overruled its 1872 decisions which recognized the riparian doctrine and has subsequently repeated and reaffirmed this position (*Reno Smelting Mill and Reduction Works v. Stevenson*, 20 Nev. 269, 21 P. 317, 1889; *Walsh v. Wallace*, 26 Nev. 229, 67 P. 914, 1902; and *United States v. Walker River Irr. Dist.*, 11 Fed. Supp. 158, D. Nev., 1935).

Formal water laws were slow to materialize in Nevada, and only general provisions were enacted through 1899.[2] County Commissioners were granted power to approve applications for water rights in 1899 (Nev. Laws 1899, Ch. XCVII) until this power was transferred in 1905 to the office of State Engineer which had only been created two years before (Nev. Laws 1903, Ch. IV). The first code was enacted in 1913 (Nev. Laws 1913, Ch. 140) and has been subsequently amended and expanded to enable the State to effectively insure the efficient use of water.

In 1939, ground water was declared public property and the use subject to acquisition of a permit from the State Engineer (N.R.S. §534.030). During the past decade many changes have taken place. Provisions for forfeiture and abandonment of ground water rights were amended in 1967 (N.R.S. §534.090). Due to the increased demand on the State's water resources and the need to plan and manage future developments of water, the Nevada legislature directed the State Engineer in 1969 to conduct studies for a water resources plan (N.R.S. §532.165) and during the 1973 legislature, he was required to complete the comprehensive water resources plan and make preparations for presenting it to the 1975 legislature sessions (N.R.S. §554.1). Also in 1969, recreation uses of water were declared to be beneficial uses.

8.2 SUBSTANTIVE LAW

8.2.1 *Property Right in Water*

The statutes of Nevada provide that:

> The water of all sources of water supply within the boundaries of the state, whether above or beneath the surface of the ground, belongs to the public (N.R.S. §533.025).
>
> . . .
>
> Subject to existing rights, all such water may be appropriated for beneficial use as provided in this chapter and not otherwise (N.R.S. §533.030).

Based upon these provisions and the statutory sections proceeding the procedure to be followed to appropriate water for a beneficial use, a right is created with distinct and definite characteristics. The water right is a real property right (*Nenzel v. Rochester Silver Corp.*, 50 Nev. 352, 259 P. 632, 1927; *Adams-McGill v. Hendrix*, 22 Fed. Supp. 789, D. Nev., 1938) and as such is a valuable right (*In re Barker Creek and Its Tributaries* [*Scossa v. Church*], 46 Nev. 254, 205 P. 518, 1922).

This real property right feature must be distinguished from the right one acquires in the water itself. Water flowing in a natural stream is not subject to private ownership and any private rights which attach are usufructuary rights to take the water into physical possession and apply it to a beneficial use (*In re Manse Spring and Its Tributaries*, 60 Nev. 28, 108 P. 2d 311, 1940). Private rights of ownership do not attach to the corpus of the water as it remains in the stream in its natural state (*Application of Filippini*, 66 Nev. 17, 202 P. 2d 535, 1949).

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[1] See, *Water for Nevada*, Vol. 2--*Estimated Water Use in Nevada* and Vol. 3--*Nevada's Water Resources*, Jan. 1971 and Oct. 1971, respectively, prepared by State Engineers Office, Carson City, Nevada, for a more extensive discussion on the State's water resources and their use.

[2] See Hutchins, Wells A., *The Nevada Law of Water Rights*, published by State Engineer, Carson City, Nevada, 1955.

The general rule, then, is that a diversion of water under a valid right of appropriation and its application to beneficial use constitutes ownership of particles of water. Once water has been diverted and taken into distribution works it takes on the characteristic of personal property.

8.2.2 Acquisition of Right

General--

An appropriation can only be initiated by filing an application and securing the approval of the State Engineer.[3] Such application shall be limited to water of one source for one purpose, although individual domestic use may be included in any application with the other use named (N.R.S. §553.330).

The application may be submitted by any corporation authorized to do business in Nevada or any person (defined as a corporation, an association, the United States, and the state, as well as a natural person--N.R.S. §533.010), or any citizen of the U.S. or any person over 21 years old who has legally declared his intention to become a citizen of the U.S. The application shall be submitted and the permit issued before any work is performed in connection with such appropriation (N.R.S. §533.325).

The application for a permit to appropriate water shall contain the following information:

1. The name and post office address of the applicant and, if the applicant is a corporation, the date and place of incorporation.
2. The name of the source from which the appropriation is to be made.
3. The amount of water which it is desired to appropriate, expressed in terms of cubic feet per second, except in an application for a permit to store water, where the amount shall be expressed in acre-feet.
4. The purpose for which the application is to be made.
5. A substantially accurate description of the location of the place at which the water is to be diverted from its source and, if any of such water is to be returned to the source, a description of the location of the place of return.
6. A description of the proposed works.
7. The estimated cost of such works.
8. The estimated time required to construct the works, and the estimated time required to complete the application of the water to beneficial use.
9. The signature of the applicant or his properly authorized agent (N.R.S. §533.335).

In addition, if the application is for irrigation uses, except for a request to store water, the applicant must give the number of acres to be irrigated and a legal description of the land (N.R.S. §533.340). All applications for permits shall be accompanied by maps, drawings and other data prescribed by the State Engineer (N.R.S. §533.350).

Upon the filing of an application, notice is published, protests may be submitted and a hearing held by the State Engineer (N.R.S. §533.360).

The State Engineer shall approve all applications made in proper form for unappropriated water and proper fees paid which contemplate the application of water to beneficial use and where the proposed use or change does not impair the value of existing rights or to be otherwise detrimental to the public welfare (N.R.S. §533.370).

Specifically, the State Engineer can reject any applications based upon the public intent and the economic welfare of the State of Nevada for a use involving the industrial purpose of generating energy to be exported out of this State (N.R.S. §533.370). These provisions clearly reflect the strong agricultural and mining interest in the State and provide the criteria in the negative for disapproving an application, thus placing the burden of rejection upon the State.

If the application is approved, the applicant is given a specific time to begin construction of works, complete his project and apply the water beneficially (N.R.S. §533.380). If reasonable diligence is not exercised, the permit may be cancelled (N.R.S. §533.395). Once the project is complete, proof of application of the water to beneficial use will cause the issuance of a certificate which describes the right (N.R.S. §533.425).

Priority in time confers a better right. Although it is not expressly provided for by statute in the case of surface water, the date of priority is established according to the date of filing the application (Hutchins, Water Rights..., Vol. 1, p. 389).

Ground Water--

Since 1939, all ground waters within the state were declared to belong to the public (N.R.S. §534.020). The right to use unappropriated ground water can be acquired by adhering to the same laws and procedures governing the acquisition of surface waters (N.R.S. §534.020). The State Engineer shall supervise all wells taking artesian water or water from a definite underground aquifer drilled after March 22, 1913 and wells which take percolating waters drilled after March 25, 1939 (N.R.S. §534.030). There is an exception for domestic purpose wells not exceeding 1800 gallons daily maximum. They can be developed and used without obtaining a permit. However, the user must furnish any information required by the State Engineer (N.R.S. §534-180). This exception can be prohibited where water can be furnished by an entity such as a water district or a municipality presently engaged in furnishing water to the inhabitants thereof (N.R.S. §534.120 (3d)).

The State Engineer may designate ground water basins on his own volition or by petition of not less than 40 percent of recorded appropriators in the basin (N.R.S. §534.030). In addition, he may create ground water boards to assist him in the administration of designated ground water basins wholly within one county.

In a designated basin, a permit must be acquired before performing any work in connection with the boring or sinking of a water well (N.R.S. §534.050). In either a designated or nondesignated basin, a person must have a permit before making a diversion.

The right of each appropriator relates only to a specific quantity and is subject to a reasonable lowering of the static water level at the point of diversion (N.R.S. §534.110 (4)). Restrictions on use of water in a ground water basin by priority of right may be initiated by the State Engineer if the annual recharge is not sufficient to satisfy all rights (N.R.S. §534.110 (6)). In areas where the ground water is being depleted, he can designate preferred uses of water (N.R.S. §534.120).

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[3] This is not strictly the case. In a case where $35,000 had been spent for a well and where no one else wanted the water in question or would be harmed by its continued use, the language of the statute was ignored by the district, Engineer v. American National Insurance Co., 498 P. 2d 1329, 1972.

Priority for ground water is established from the data of filing the application with the State Engineer (N.R.S. §§533.355 and 534.080).

Prescription Water Rights--
No prescriptive rights to the use of water, appropriated or unappropriated, may be established by adverse use or adverse possession in Nevada (N.R.S. §533.060 (3)).

Preferences--
Nevada does not recognize any preferences for surface water in the event of shortage; or for ground water in non-designated areas. However, in designated ground water areas where the aquifer is being depleted, the State Engineer is authorized and directed to designate preferred use of ground water in the interest of the public welfare within the following limits: domestic, municipal, quasi-municipal, industrial, irrigation, mining and stock-watering uses (N.R.S. §534.120 (2)).

8.2.3 Adjudicating Water Rights[4]

To insure proper and efficient administration and distribution of the States' waters, there is a special statutory procedure for the determination of individual water rights (N.R.S.§§533.090 to 533.320). This procedure can be initiated upon petition of one or more users of a stream or ground water systems, or by the State Engineer, if the situation justifies it. The State Engineer's duty under this statutory adjudication process is to prepare a hydrographic survey of water uses and to receive statements filed by the various claimants. These statements constitute the claimants' "pleadings" on the action. From this information the State Engineer is to prepare a preliminary determination of the rights of individual users. Copies of this determination are then served on individual users and the State Engineer hears any objections of the parties and takes evidence regarding any protests filed.

The final order of the State Engineer with the evidence submitted at the hearing is filed with the appropriate district court. This filing forms the basis of any civil action (N.R.S. §§533-090 to 533.185). The adjudication takes place in the court with the statements of the claimants and the determination proposed by the State Engineer constituting the pleadings (*Vineyard Land and Stock Co. v. District Court*, 42 Nev. 1, 171 P. 166, 1918). Since this actual adjudication is made by the court, relief will be granted to an aggrieved party when the State Engineer has infringed upon an individual's rights (*In re Silver Creek*, 57 Nev. 232, 61 P.2d 987, 1936). The State Engineer's findings are, however, presumed to be correct (*Scossa v. Church*, 46 Nev. 254, 205 P. 518, 1922). The decree of the district court may be appealed to the Nevada Supreme Court. Upon final determination of the relative rights of the waters being adjudicated, the State Engineer will issue certificates defining each individual right (N.R.S. §533.365).

This statutory procedure is not the exclusive method of determining vested rights. The State Engineer may, upon petition of the users, administer water rights under a final decree. This decree would result from an action other than special statutory proceedings (N.R.S. §533.310).

In addition to these methods of adjudicating rights or enforcing decrees, individual users may obtain a determination of their respective rights through a quiet title action as water rights are characterized as real property (*Pacific Live Stock v. Ellisen Ranching Co.*, 52 Nev. 279, 286 P. 120, 1930). Since all water rights are adjudicated in these statutory procedures, there is no significance between a historical diversion and a statutory rights. The significance of adjudicating a right is to establish the positions of all parties on a stream or source.

8.2.4 Conditions of Use

Beneficial Use--
Nevada statutes provide that "beneficial use is the basis, measure and limit of the right to use water" (N.R.S. §533.035). It has been held in Nevada and substantiated by statute that the water user cannot legally appropriate more water than can reasonably be put to beneficial use (*Dick v. Caldwell*, 14 Nev. 167, 1879; and N.R.S. §533.070).

Water may be appropriated for any beneficial use. The Nevada statutes do not define the limit or the extent to the uses which may be recognized as beneficial. The statutes have declared specifically that water for watering livestock and recreation are beneficial uses (N.R.S. §§533.490 and 533.030). The statutes also specify necessary information in an application of appropriations for irrigation, power, municipal, mining, and stock watering purposes. A focus of special factors in allocating irrigation water will be discussed in the next section.

General requirements for beneficial uses of water under a valid water right include:

1. The right shall remain appurtenant to the place of use (N.R.S. §533.044) although if this becomes impracticable, the vested right may be severed from such place of use and simultaneously transferred and become appurtenant to other place or places of use without losing priority, provided an application is filed with the State Engineer which contains such information as may be necessary to a full understanding of the proposed change (N.R.S. §533.345).

2. Any person may exercise the right of eminent domain to construct, use and maintain any work for the lawful diversion, conveyance and storage of waters (N.R.S. §533.050); and

3. Water may be stored for a beneficial purpose (N.R.S. §533.055).

While irrigation is held to be a beneficial use (*Miller and Lux v. Rickey*, 127 Fed. 573, D. Nev., 1904), the mere watering of land with the intent to promote plant growth cannot be classed as beneficial if the conditions are such as to produce meager insubstantial results (*Vineyard Land and Stock Co. v. Twin Falls Salmon River Land and Water Co.*, 245 Fed. 9, C.C.A. 9th, 1917).

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[4] This discussion is condensed from the Nevada Statutes and *A Summary Digest of State Water Laws*, by R. Dewsnup and D. Jensen, National Water Commission, Wash., D.C.,"Ch. 28--Nevada, Section 2.2--Resolution of Water Use Conflicts," pp. 473-475.

Regarding the actual exercise of the water right to divert for irrigation, it was held in 1906 that beneficial use must also be made only at such times as the water is needed (*Twaddle v. Winters*, 29 Nev. 88, 85 P. 280, 1906, 89 P. 289, 1907). This position was codified in 1913 as a limitation on water rights. Paraphrased, the present statutory provision states that the right to divert ceases when a necessity for the use of water does not exist, and no person shall be permitted to divert or use the waters appropriated until such time as the water is required for a beneficial purpose (N.R.S. §533.045).

The Nevada courts have further qualified beneficial and reasonable use as being economical (*Reeder v. Stein*, 23 Nev. 92, 42 P. 867, 1895; *Stepee Live Stock Co. v. Gulley*, 53 Nev. 163, 295 P. 772, 1931). In essence, the appropriator "should be required to make an economical, as well as reasonable, use of the water" (*Union Mill and Mining Co. v. Dangberg*, *loc. cit.*). This doctrine has been repeatedly cited in Nevada courts (*Doherty v. Pratt*, 34 Nev. 343, 124 P. 574, 1912; *Kent v. Smith*, 62 Nev. 30, 140 P.2d 357, 1943).

These concepts are important for irrigation purposes in that what is considered reasonable depends on the facts and circumstances of each case. Improved irrigation practices have to be considered an element of reasonableness. Irrigation also must be measured against a more economic and, therefore, a more reasonable use of water in Nevada. It can be argued that an industry which produces greater economic benefit for the State of Nevada might, in appropriation questions, take priority over irrigation uses.

The limitations on appropriative rights--requiring economical, beneficial and reasonable use and precluding any waste of water--have been applied to a claimant whose method of irrigation was wasteful according to modern standards (*Vineyard Land and Stock Co. v. Twin Falls Oakley Land and Water Co.*, 245 Fed. 30, C.C.A. 90th, 1917). The case involved a dispute over the amount of water to be awarded to the parties involved. One party desired to continue flooding hay pastures. The court responded:

> The Land and Stock Company insists that the duty of water should still be measured by the old method of irrigation of pasture and the native grasses for the production of hay, which was by the flooding system, that allowed the water to cover the surface of the soil, and actually remain thereon for considerable periods of time. This method is being disapproved of in more recent years as wasteful and not an economical use. No person is entitled to more water than he is able to a reasonable and economic use. True, it may be that good results are obtainable from the former method, but that does not argue that just as good results may not be secured by a much more moderate use, which would leave a large quantity of water for others....

The irrigator was allowed only enough water to irrigate the land in a reasonably efficient manner. The amount of water decreed was less than had been prior to the decree. Clearly, this decision has significant implication when considering irrigation return flow problems. The theory under the rule of economic use is that there should be no surplus or waste water. It is, however, recognized that absolute efficiency in the diversion, conveyance and application of water is not practicable. A certain amount of waste is unavoidable (*Bidleman v. Short*, 38 Nev. 467, 150 P. 834, 1915). In determining the question of reasonable and economic use of water and thereby beneficial use, courts will consider the methods of use existing throughout the area in question and will not penalize an appropriator whose system is comparable even though the typical irrigation system may not be the best that could be devised (*Rodgers v. Pitt*, 89 Fed. 420; D. Nev. 1898, 129 Fed. 932, D. Nev. 1904).

Duty of Water--

In determining the duty of water for irrigation purposes (the requirements of water for irrigation) upon applications for water rights, Nevada has departed from the traditional statutory duty adopted by many Western States. The Nevada system is designed to allow a reasonable administrative determination based upon a case by case analysis. Under the current law, the State Engineer is to consider the duties of water established by court decrees or by experimentation within the area in question (N.R.S. §533.070). In addition, he is instructed to consider the growing season, type of culture and reasonable transportation losses for each use. When these requirements have been determined, they are to be placed upon a grid of the area in the State in which the appropriation is to be made. Reservoir evaporation losses should be taken into account for stored water to determine the volume to be granted under the permit. Further statutory provisions limit the exercise of a water right to that amount necessary when reasonably and economically used for irrigation and other beneficial purposes, irrespective of the carrying capacity of the ditch (*A Summary Digest of State Water Laws*, *loc. cit.*).

Rotation in Use--

To encourage a more beneficial use of water, Nevada allows water users owning lands to which water is appurtenant to rotate the use of their supply in order to create an irrigation head of at least 2 cfs. (N.R.S. §533.075).

Waste--

Nevada law prohibits the willful waste of water "to the detriment of another" (N.R.S. §533.460), and has granted the State Engineer and his assistants the power to arrest anyone violating this provision (N.R.S. §533.475).

The legislature specifically addressed the unlawful use and waste of water during an irrigation season (N.R.S. §533.530). This provision declares it to be an unlawful use and waste of water to divert water into any slough, dam, pond or otherwise retain it without making any other use of the water or to allow water to run to waste on sagebrush or greasewood land. Waste of water from surface and ground water constitutes a misdemeanor.

This prohibition has also been extended to artesian well water and charges that the owner of an artesian well from which unnecessary waste of water is occurring is guilty of a misdemeanor.

For irrigation, reasonable carriage losses are permitted when conveying water from the point of diversion to the place of use. Two types of conveyance losses are recognized: losses which occur in the user's ditch, and those which occur in the natural channel. Those which occur in the natural channels are not the responsibility of the prior appropriator, as the efficiency of a channel is beyond the control of the water user. The water can be beneficially used without regard to the amount of water loss in the upstream channels (*Rodgers v. Pitt*, 89 Fed. 420; D. Nev., 1898, 129 Fed. 932; D. Nev., 1904). Excessive losses which occur in the user's ditch which are within his control, however, must be avoided (Doherty v. Pratt, 33 Nev. 343, 124 P. 574, 1912).

The significance of the duty placed on the owner of a ditch is that it affects both the individual user and the ditch company. This doctrine, coupled with the decision in Vineyard Land and Stock Company v. Twin Falls Oakley Land and Water Co. (42 Nev. 1, 171 P. 166, 1918), is a clear mandate to ditch owners that the physical facility must be both efficient and in good repair.

8.2.5 Manner in Which Rights May be Adversely Affected

Abandonment and Forfeiture--

Nevada legislature has enacted separate provisions for the abandonment and forfeiture of surface and ground water rights. The Nevada statutes provide that when any water right owner of surface or ground waters fails to use water during any five successive years, the right is deemed abandoned and the water rights, easements and privileges are forfeited and the water again is available for appropriation (N.R.S. §533.060). This statutory "forfeiture" is based solely on a failure to use the water; intent not to use the water is immaterial (In re Manse Spring and Its Tributaries, loc. cit.).

Although the Nevada statute on surface water commingles the terms of both abandonment and forfeiture, they are different legal concepts and this distinction has been made by the courts. Abandonment requires both an intent to forsake the right and an act of nonuse (Valcalda v. Silver Peak Mines, 86 Fed. 90, C.C.A. 9th, 1898). Forfeiture is simply nonuse for the statutory time period. The intent is to be evidenced by overt acts (Anderson Land and Stock Co. v. McConnell, 188 Fed. 818 (C.C., Nev., 1910), but must be voluntary or justifiable action not to exercise the right (In re Manse Spring and Its Tributaries, 60 Nev. 461, 155 P. 2d 324, 1945). It has been held that the discharge of water for the purpose of disposing of it, without any intention of reclaiming it, is conclusive evidence of the abandonment of a right (Schulz v. Sweeny, 19 Nev. 359, 11 P. 253, 1886). Once a water right has been abandoned, the right ceases and cannot be resumed after the rights of others have intervened (Anderson Land and Stock Co. v. McConnell, loc. cit.). Abandoned water becomes a part of the natural stream or other source and reverts to the state (In re Manse Spring and Its Tributaries, loc. cit.). The fact that abandoned water again becomes the property of the public eliminates any chance of a water right being claimed by an individual based on another's abandonment.

The statutory provisions on underground water address themselves both to forfeiture and abandonment (N.R.S. §534.090 (1) & (2)). However, the terms are distinct and application easily discernable.

Forfeiture follows the five successive year nonuse plus the need of notification to the person of record by the State Engineer. If the person of record fails to appeal the ruling of forfeiture, the forfeiture becomes final.

A right to use underground water may also be lost by abandonment. If the State Engineer is investigating a ground water source upon which there has been a prior right, for the purpose of acting upon an application to appropriate water from the same source, and is of the belief that an abandonment has taken place, he shall report this finding in approving the application. Therefore, he must notify the person of record, and if this person fails to appeal such ruling the alleged abandonment declaration becomes final.

Adverse Possession--

In 1949, Nevada adopted a statute which provides that an adverse use right cannot be acquired in any of the appropriated or unappropriated waters in Nevada (N.R.S. §533.060(3)).

Condemnation--

Condemnation is a process by which the property of a private owner is taken for public use, with the payment of just compensation (Black's Law Dictionary).

Nevada law provides that beneficial use of water is a public use, and upon receiving an appropriation any person may exercise the right of eminent domain to condemn lands and other property which is necessary for the construction of works for the use of water (N.R.S. §533.050). Once the easement is obtained, it cannot be lessened or interfered with by an owner of a servient estate. Neither can an owner of an easement enlarge it without further condemnation proceedings and the payment of compensation (Thomas v. Blaisdell, 25 Nev. 223, 58 Pac. 903, 1899).

Enforcement of Beneficial Use or Waste Concepts--

The holder of an appropriation right in Nevada is limited to the quantity of water specified in the application or certificate of appropriation (if issued). An appropriative right is also limited by beneficial use requirements (N.R.S. §533.035). This has been judicially recognized in Dick v. Caldwell (14 Nev. 167, 1879). The court in this case held that a water user cannot legally appropriate more water than can be placed to beneficial use.

The Nevada Supreme Court has emphasized that beneficial use is measured by and limited to reasonable needs (Barnes v. Sabron, 10 Nev. 217, 1875). In addition, the legislature has reiterated this limitation for irrigation as restricted to that amount that can be reasonably and economically used, with the "balance of the water not so appropriated" to be allowed to flow in the stream for other users (N.R.S. §533.475). The State Engineer or his assistants have the authority to arrest any person violating the provision (N.R.S. §533.475). If he determines it necessary to hire guards to prevent unlawful diversions of water, he can pay their salaries and charge the ditch owners (N.R.S. §533.470). If the owners fail to pay, such charges become a lien against the lands having water rights under the conveyance system.

8.2.6 Legal Incentives and Disincentives for More Efficient Water Use Practices

Irrigation Return Flow--

A federal case arose in Nevada concerning the question of using return flows from irrigation and the effect upon downstream water users (Vineyard Land and Stock Co. v. Twin Falls Salmon River Land and Water Co., 245 Fed. 9, C.C.A. 9th, 1917). An upstream water user was using appropriated water in such a manner that approximately two-thirds of the appropriation returned to the stream via percolation. The upstream senior appropriator was applying 12,500 acre-feet of water annually to irrigated land. Of this amount, 8,500 acre-feet was returning to the river. The appropriator desired to transfer the use of this return flow to another location. This would have deprived the downstream user of 8,500 acre-feet of return flow.

The court defined return flow waters as those that after use by an upstream appropriator find their way back to the stream by reason of percolation or runoff. It went on to hold that as to return waters, upstream appropriators cannot change their place of use or method of use if it affects the natural stream so as to adversely affect downstream users since junior appropriators are entitled to have conditions exist substantially as they did at the time of their appropriation. Further, use of the water by the upstream prior appropriator was confined by the court decree to the locality in which it was being used at the time a downstream appropriation was made. This resulted from the concept that the downstream appropriator was entitled to a continuance of conditions in existence at the time of the appropriation.

The court held that the difference between the appropriation and the return flow, or the true appropriation, was only 4,000 acre-feet. This is in line with modern consumptive use cases. It also conforms with decisions permitting the capture of water for reuse on the same land but prohibiting its use on different lands.

Though it appears that this doctrine is an impediment to efficient irrigation practices, there is a compelling logic about it. Since beneficial use is the basis, the measure and the limit of a water right, it would be a misreading of a water right to include not only the water which was used but also the water which is simply allowed through the land and back to the river.

Salvaged and Developed Waters--

Generally, an appropriator is entitled to have the stream flow in its natural course to the point of diversion. The appropriator may not be deprived of such use for the benefit of a later claimant upstream even if he could show a greater benefit (Tonkin v. Winzell, 27 Nev. 88, 73 P. 593, 1903). However, the court held that an upstream junior appropriator has a right to salvage water by draining swamps and depressions or by substituting ditches, flumes, pipes, or by other means for sandy or numerous channels that lose water. The expense is to be borne by the junior appropriator who wants to utilize the saved water. The limitation on the use of saved water is that such actions shall not be to the detriment of existing rights, whether up or down the stream.

The law on developed water is likewise the result of a very early case. In Cardelli v. Comstock Tunnel Co. (26 Nev. 284, 66 P. 950, 1901), the court held that water produced by individual labor and enterprise and not a part of the watercourse has a right to the water.

There have been no recent cases on salvaged or developed waters in Nevada. These dated holdings, however, remain consistent with the majority of decisions throughout the West.

Waste Water--

Waste water is characterized by the Nevada Supreme Court as surplus water running off irrigated ground not consumed by the process of irrigation.[5] It is the property of the original user as long as it remains on the appropriator's land (Bidleman v. Short, 38 Nev. 467, 150 P. 834, 1915).

Landowners may consent to the appropriation of waste water by other persons on their own property and in ditches constructed on their own property for the purposes of conveying these rights to land of the other parties (Hutchins, 1955, pp. 55-56). But the owner of land from which waste water originated is not required to "continue and maintain conditions so as to supply the appropriation of waste water at any time or in any quantity when acting in good faith" (Ryan v. Gallio, loc cit.). The user of waste water does not gain any control over irrigation ditches or the water flowing within the land of origin. A landowner cannot be compelled to continue wasteful methods of use for the benefit of a claimant of waste water flowing from the landowner's premises (In re: Bassett Creek and Its Tributaries, 62 Nev. 461, 155 P. 2d 324, 1945). In the case of In Re: Bassett Creek, a lower landowner was taking water from drainage works of an upper landowner. The water in the ditch was waste water from the upper land. The lower landowner sought to compel the upper landowner to continue this waste on the theory that he had acquired rights to the waste water. The Nevada Supreme Court refused to compel the upper landowner to continue these practices saying that no one could acquire rights to a continuance of the waste of water.

Provisions for Transfer of Water Rights and Diversions--

The policy in Nevada has been to encourage ditch companies to invest the capital necessary to divert and transfer water for delivery to individuals, particularly where the user could not afford to construct the facilities necessary to convey water from the stream to the place of use (Prosole v. Steamboat Canal Co., loc cit.).

Nevada statutes allow changes in the point of diversion, place of use, or purpose of use for water rights. The change procedure must be initiated by filing a change application with the State Engineer (N.R.S. §§533.325 and 533-345).

The change application will be approved if a proposed change does not impair the value of existing rights or if it is not detrimental to the public welfare. A change that does not meet those statutory criteria will be rejected (N.R.S. §533.370). The right to make a change has consistently been recognized in Nevada if the change does not constitute an injury and does not decrease the value of the rights of others (Smith v. Logan, 18 Nev. 149, 1 P. 678, 1883; Miller and Lux v. Rickey, loc cit.). As noted above, no change may be refused if the return flows find their way back to the stream and downstream appropriators are not injured (Vineyard Land and Stock Co. v. Twin Falls Salmun River Land and Water Co., loc cit.).

8.2.7 Water Disposal and Drainage

Disposal of Waste Water--

Upper landowners who irrigate lands under an appropriative right must use reasonable methods of irrigation so as not to injure the lands of their neighbors (Blaisdell v. Stephens, 14 Nev. 17, 1879). Where parties are acting independently of each other with the result being an injury to a lower landowner, they cannot be held jointly liable for the acts of each other (Johnston v. Rosaschi, 44 Nev. 386, 194 P. 1063, 1921). This seems to indicate that all possible defendants will have to be brought into the case and a fact finding made as to the damage caused by each defendant. This could affect attempts to deal with salinity control since the nature of the problem is one having numerous contributions.

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[5] This includes water seeping from irrigated land onto the adjoining land of another. In re: Bassett Creek and Its Tributaries, 62 Nev. 461, 155 P. 2d 324, 1945.

Drainage--
The owner of an upper tract of land has an easement on lower tracts of land to the extent of the natural flow of water from the upper to the lower tracts of land (Blaisdell v. Stephens, 14 Nev. 17, 1879). This rule was restated in Boynton v. Langley years later:

> As the flow of water caused by the fall of rain, the melting of snow, or natural drainage of the ground, the doctrine is that when two tracts of land are adjacent and one is lower than the other, the owner of the upper tract has an easement in the lower land to the extent of the water naturally flowing from the upper land to and upon the lower tract. And that any damage that may be occasioned to the lower land is not actionable. This rule, however, only applies to water which flows naturally from the springs, from storms of rain or snow or the natural moisture of the land. Wherever courts have had occasion to discuss this question they have generally declared that the servitude of the lower land cannot be augmented or made more burdensome by the acts of industry of man (Boynton v. Longley, 19 Nev. 69, 6 P 437, 1885).

This case dealt with a controversy concerning an upper landowner cultivating land by artificial irrigation. The court held that the upper landowner, while having the right to make a reasonable use of water for irrigation, must so use, manage and control it in such a way as not to injure his neighbor's land. This holding has significance in the area of irrigation return flow because a reasonable use of water by an upper irrigator contemplates the elimination of water flowing across the land in an attempt to keep the water right intact. Damage to the lower landowner may be in the nature of flooding or through increased salinization. In either case the damage caused by an unreasonable use of water by an upper landowner causes an undue burden on the lower landowner. The difficulty involved concerns proof. It is relatively easy to prove the chain of causation in a flood but much more difficult concerning salinity problems.

8.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

8.3.1 State Water Agencies

The Department of Conservation and Natural Resources has general administrative supervision over all natural resource agencies (N.R.S. §232.020). It shall be headed by a Director who must be a registered professional engineer and possess a wide knowledge of the natural resources of the State of Nevada (N.R.S.§232.040).

The powers and duties of the Director relative to the waters of Nevada include that he shall:

> ...(e) Coordinate all studies in the State of Nevada concerned with the supply, development, use and conservation of water.
>
> (f) With the approval of the Governor, may enter into cooperative agreements with any federal or state agency, or any public or private institution in or outside the State of Nevada or any person, corporation or association, in connection with studies and investigations pertaining to waters (N.R.S. §232.070).

The executive head of this division of water resources is the State Engineer, appointed by and responsible to the Director. He and the employees of the division of water resources have the powers and duties conferred upon the State Engineer pursuant to Title 48--Waters of the Nevada Revised Statutes and the provision of any other laws (N.R.S. §232.100).

The State Engineer is a registered professional engineer (N.R.S. §232.030). He is empowered to make reasonable rules and regulations necessary for the execution of his powers and may make rules not in conflict with law governing the practice and procedures in all contests before his office.

The State Engineer is responsible for developing a comprehensive water resource plan for the state as well as reviewing proposals by federal, state and local agencies concerning water and flood control for possible conflict (N.R.S. §532.165). In January 1971, he submitted to the citizens of Nevada several in a series of reports on his findings for a state water planning program (Water for Nevada, Vol. 1 & 2, 1971). This report identified three broad objectives to be pursued in the plans for water use in Nevada: (1) maintain or improve the quality of the state's environment; (2) strive for greater economic efficiency per unit of investment in water and related land resources; and (3) create specific patterns of area development through water and related resources investments (Ibid., pp. 3-4).

The office of the State Engineer handles all applications of appropriation of water (N.R.S. §§533.325 and 534.050), as well as applications for permits to change place of diversion, manner of use or place of use (N.R.S. §533.345). He has authority to develop rules and regulations for application of water rights, information needed thereon and for administering the rights. He is responsible for ensuring the proper distribution of appropriated waters (N.R.S. §533.305) and shall appoint water commissioners on a stream system or water district to carry out the local administration of water rights and distribution of water (N.R.S. §533.270). Among the many other duties of his office are: approval or rejection of applications to use water for livestock watering (N.R.S. §533.500); supervision of ground water basins (N.R.S. §534.030) and regulation of withdrawals in basins where ground waters are being depleted (N.R.S. §534.120); allocation and control over development, use and conservation of geothermal waters (N.R.S. §534A.020); and inspection and control over dams (N.R.S. §535.030). He is authorized, also, to divide the state into water districts to promote administrative supervision (N.R.S. §533.300).

Upon petition signed by one or more water users, or upon his own authority, the State Engineer is to determine the relative rights to the use of water (N.R.S. §533.090). His determination shall have the legal effect of a complaint in a civil action (N.R.S. §533.160). Following the final determination of the relative rights in and to the waters of a stream system, he shall issue certificates as to the determination (N.R.S. §533.265).

One interesting and unique feature in Nevada water law concerns the power of the State Engineer to insure that laws under his jurisdiction are carried out. This feature is the power granted the State Engineer and his assistants to arrest any person violating the provisions of Chapter 533 pertaining to the adjudication of vested water rights and the appropriation and use of public waters (N.R.S. §533.475). Under this statute, an arrested person is to be turned over to the sheriff or other competent police officer in the county where the arrest takes place. Immediately thereafter, the water official making the arrest is to submit a written complaint against the arrested person to a justice of the peace.

8.3.2 Judicial Bodies

Nevada does not have special water courts. If an order of determination is filed in court in a statutory proceeding then distribution of water is under the supervision of the court (N.R.S. §533.220). Orders and decisions of the State Engineer are subject to judicial review by the district courts of Nevada and on appeal to the Supreme Court of Nevada (N.R.S. §§ 533.450 and 533.455).

8.3.3 Water Users and Their Organizational Structure

Water can be appropriated for use by individuals, corporations, associations, companies, the United States, and the state (N.R.S. §533.010). Whether private or public entities, all users are subject to the same requirements of beneficial use. The responsibility may vary, however, depending upon the obligation of an entity to its members and the public.

Nevada law requires owners of ditches and canals to maintain satisfactory headgates at or near where water is diverted and measuring devices at points necessary to determine the flow to various users (N.R.S. § 536.010).

Public Entities--
Water users can cause the formation of public entities for water appropriation, development, delivery and management. Generally, these entities may include irrigation, drainage and conservancy districts.

Irrigation districts may be formed under Nevada statutes 539.010 to 539.783 and are corporations with a public purpose. These districts differ from counties and like political units in that they function for the profit of the inhabitants and are set up for business and not governmental purposes.

Irrigation districts are given the power of eminent domain (N.R.S. §539.225). The board of directors may appropriate water, construct necessary works and provide for drainage of lands (N.R.S. §539.230). Water can be supplied by contract, agreement or other legal matter (N.R.S. §539.235). In order to secure complete drainage of lands, the board of directors has the power to widen, straighten or deepen any watercourse (N.R.S. §539.245). The board of directors of an improvement district can:

> ...provide for the construction of canals, ditches, laterals, dams, drains, or other structures or improvements or the acquirement, replacement, consolidation or extension of the same, or the leasing, acquisition or construction of electrical transmission lines and accessory equipment, the benefits of which affect all or are limited to a portion of the district only, in the manner provided in NRS 539.423 to 539.460 inclusive (N.R.S. §539-423).

Drainage districts may be organized under Nevada statutes 540.010 to 540.790. Proposal of a drainage district is accomplished by a majority of land owners within a proposed district (N.R.S. §540.030).

The board of supervisors have:

> 1. The right to acquire on behalf of the district, by purchase or condemnation or other legal means, all lands and other property necessary for the construction, use, maintenance, repair and improvement of the canal or canals, drains and works constructed (including canals, drains, or drain ditches being constructed by private owners), and all necessary appurtenances.
> 2. The value of the land or other property taken for use by the district shall be determined, if possible, by arbitration, the arbitrators to be selected, in the usual manner, and if the owner thereof will not consent to arbitration, then by condemnation proceedings. In case of necessity for condemnation proceedings the board shall proceed in the corporate name of the district under the provisions of law relating to eminent domain (N.R.S. § 540-460).

Water conservancy districts may be formed under Nevada law 541.010 to 541-420. These statutes provide:

> 1. It is declared that to provide for the conservation and development of the water and land resources of the State of Nevada and for the greatest beneficial use of water within this state, the organization of water conservancy districts and the construction of works as herein defined by such districts are a public use and will:
> (a) Be essentially for the public benefit and advantage of the people of the State of Nevada;
> (b) Indirectly benefit all industries of the state;
> (c) Indirectly benefit the State of Nevada in the increase of its taxable property valuation;
> (d) Directly benefit residents of the State of Nevada by providing adequate supplies of water for domestic, municipal and industrial use;
> (e) Directly benefit lands to be irrigated or drainage from works to be constructed;
> (f) Directly benefit lands now under irrigation by stabilizing the flow of water in streams and by increasing flow and return flow of water to such streams;
> (g) Directly benefit urban use of water or development of water resources by flood control; and
> (h) Promote the comfort, safety and welfare of the people of the State of Nevada.
> 2. It is therefore declared to be the policy of the State of Nevada:
> (a) To control, make use of and apply to beneficial use unappropriated waters in this state to a direct and supplemental use of such waters for domestic, manufacturing, irrigation, power and other beneficial uses.
> (b) To cooperate with the United States and agencies thereof under the federal reclamation laws or other federal laws now or hereafter enacted and to construct and finance works within or without the State of Nevada as herein defined and to operate and maintain the same (N.R.S. §541-030).

A petition must be filed with the clerk of court and signed by not fewer than 20 percent of the owners of the land and by not fewer than 5 percent of 100, whichever is lesser, of landowners within an incorporated or unincorporated city (N.R.S. §541-050).

8.4 POLLUTION CONTROL

The Department of Health and Welfare is the state's water pollution control agency. The Department develops programs to eliminate or reduce pollution and improve the sanitary condition of water. It is a misdemeanor to pollute the waters of any lake, river, stream, or ditch. The Attorney General can maintain actions to prevent or restrain pollution (N.R.S. §§ 445.010 to 445.060).

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APPENDIX A REPORT 9

NEW MEXICO

9.1 HISTORICAL BACKGROUND

New Mexico is an arid state of 121,666 square miles, receiving 15 inches of annual precipitation. Typical of many arid western states in its water use patterns, the state has experienced a slight increase in total irrigated acreage each year from 850,000 acres in 1965 to 1,069,000 in 1974, but with considerable increase in sprinkler irrigation from 20,000 acres in 1965 to 159,800 in 1974 (Irrigation Survey).

In 1898, the Territorial Supreme Court rules that the law of prior appropriation existed under the Mexican Republic at the time of the acquisition of New Mexico, and was the settled law of the territory (United States v. Rio Grande Dam and Irrigation Co., 9 N.M. 292, 51 P.674, 1898).[1] In Albuquerque Land and Irrigation Co. v. Guitierrez (10 N.M. 177, 61 P. 357, 1900), the Territorial Supreme Court stated that it is undoubtedly true that the diversion and distribution of water for irrigation and other domestic purposes in New Mexico is a public purpose.[2] Further, the courts of New Mexico have consistently held that the common law doctrine of riparian rights has never been applicable in New Mexico (Trambley v. Luterman, 6 N.M. 15, 27 P. 312, 1891; Hagerman Irr. Co. v. McMurray, 16 N.M. 172, 113 P. 823, 1911). The riparian doctrine was repudiated in New Mexico as a result of the adoption of the laws of the Mexican Republic which included the doctrine of prior appropriation (Snow v. Abalos, 18 N.M. 681, 140 P. 1044, 1914).

In 1907, New Mexico enacted comprehensive legislation governing the appropriation of waters from a watercourse (N.M.S. §75-5-1 to 37). This legislation, with certain amendments, is the law governing the appropriation of water today and is the exclusive procedure by which a right can be acquired (Farmers' Development Co. v. Rayaldo Land and Irrigation Co., 28 N.M. 357, 213 P. 202, 1923).

Prior to the adoption of the appropriations statute in 1907, a water right could be acquired under the general laws of appropriation as recognized in the western states (Farmers' Development Co. v. Rayaldo Land and Irr. Co., 28 N.M. 357, 213 P. 202, 1923).[3] Under this procedure, a water right could be acquired if there was a diversion and an application of the water to a beneficial use. Neither was considered sufficient without the other (Albuquerque Land and Irr. Co. v. Gutierrez, 10 N.M. 177, 6 P. 357, 1900). The 1907 appropriation statute provided that all claims which had been initiated prior to 1907 would be accorded a priority date relating back to the initiation of the claim. This was conditioned by the requirement that the user had diligently maintained the works to completion and had applied the water to beneficial use. Provision has been made for recording a declaration of these pre-1907 rights. Once recorded, the information is considered prima facie evidence of the existence of a water right (N.M.S. §75-1-2, 75-1-2.1 and 75-1.2.2).

Joint irrigation ditches for a common water supply for individuals were commonly constructed in many areas of New Mexico. These organizations were commonly referred to as community ditches or "acequias." The water rights of these organizations were protected by both the territorial and the state government. Under the community ditch concept, the ownership of the ditch was separate from the ownership of the water rights. Each water right was considered appurtenant to the land and owned by the owner of the property (Holmberg v. Bradford, 56 N.M. 401, 244 P.2d 785, 1952). These "acequias" have, by statute, been made political subdivisions of the state (N.M.S. §75-14-1 to 75-14-61 and 75-15-1 to 75-15-10).

New Mexico has recognized an unusual water rights doctrine. This is the concept of Pueblo Water Rights. These rights are the paramount right of a city (as a successor of a Spanish or Mexican or Mexican pueblo) to use the water which naturally occurs within the limits of the old pueblo for the use of the inhabitants. This concept exists on an expanding scale, the right grows as the city's needs grow (Cartwright v. Public Service Co., 66 N.M. 64, 343 P.2d 654, 1959). The pueblo right is an absolute right to the use of all waters, both ground and surface, within the city for the use and benefit of its inhabitants (City of Albuquerque v. Reynolds, 71 N.M. 428, 379 P.2d 73, 1963).[4] Before a pueblo right may be exercised, however, notice must be given to all water users who would be affected by the exercise of the right.

The New Mexico Supreme Court has considered the Pueblo Water Right on several instances. In one case, the doctrine was found applicable to one New Mexico community whose rights were preserved (Cartwright v. Public Service Co., 66 N.M. 64, 343 P.2d 654, 1959). In two others, however, the court held that the Pueblo Water Right of a townsite was granted by officers of the United States government under the authority of an act of Congress long after New Mexico had become a part of the United States and was subject to and controlled by the laws of the granting sovereign. The land having been acquired from the United States, the grant carried with it only those rights and privileges that were accorded by the law of the United States (State ex rel Community Ditches v. Tularosa Community Ditch, 19 N.M. 352, 143 P.207, 1914). In a later case involving a Pueblo Water Right on behalf of the city of Santa Fe, the New Mexico Supreme Court concluded that no grant was made by the Spanish King to the villa de Santa Fe. Without such a grant, the villa de Santa Fe had no Pueblo Water Right. No mere colony of squatters could acquire under the Spanish law this extraordinary power over the waters of the entire nonnavigable stream known as a Pueblo Right, even though they were organized as a Pueblo. In effect, the occupany of the Pueblo by the Spanish military and governmental authorities conferred no title on the inhabitants (United States v. Santa Fe, 165 U.S. 675, 1897).

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[1] This decision was reversed in U.S. v. Rio Grande Dam and Irr. Co., 174 U.S. 690, 1899, but not on this point of discussion.

[2] For an excellent discussion of the historical aspects of New Mexico water law, see Hutchins, The New Mexico Law of Water Rights, 1955.

[3] See Clark, Robert E., "Water Rights Problems in the Upper Rio Grande Watershed and Adjoining Areas." 11 Natural Resources Journal, 48, 1971.

[4] This definition was found in the applicant's petition.

By a law passed in 1909 (N.M. Laws 1909, Ch. 128, §2), the State Engineer was authorized to grant permits for appropriations of flood waters upstream which can result in return flows above the works of other irrigators or appropriators when such uses will not deprive the lower appropriators of their reasonable requirements (N.M.S. §75-5-28).[5]

New Mexico was admitted into the union in 1912. The state constitution which was adopted in January 21, 1911, recognized all existing rights to the use of water for beneficial purposes, declared the unappropriated water of every natural stream to belong to the public subject to appropriation and provided that beneficial use was the basis, measure and limit of the right to use water (New Mexico Const., Art. XVI). Subsequent legislation in 1927 provided that ground water in underground streams, channels, artesian basins, reservoirs, or lakes having reasonably ascertainable boundaries was also public water and subject to appropriation for beneficial use (N.M.S. §75-11-1).

In 1928, the New Mexico Supreme Court held that a right to the continued use of a vested and accrued water right will be maintained and protected as fully as the right to a continued use of the easement in the works by which the use of the water and the water right is effectuated (Pecos Valley Artesian Conservancy Dist. v. Peters, 52 N.M. 148, 193 P. 2d 418, 1948).

New Mexico's ground water appropriation law, which is still in effect today, was enacted in 1913 to replace 1927 legislation which had been declared invalid because of technical defects (N.M. Laws 1931, ch. 131). Significant amendments were added to this legislation in 1953 and will be discussed in greater detail in subsequent sections (N.M. Laws, 1953, ch. 64, see N.M.S. §75-11-19 to 22).

A statute enacted in 1933 provided that where there has been continuous use of a ditch for purposes of irrigation for five years, "it shall be consluvely presumed as between the parties, that a grant has been made by the owners of the land, upon which such ditch is located, for the use of the same" (N.M. Laws 1933, ch. 65). This statute was amended in 1941 so that the statute would not be construed so as to prevent the owner of the servient estate from making alterations, or changes in the location of any ditch upon his land, provided that such action would not interfere with the use of the ditch by the dominant owner (N.M. Laws, 1941, ch. 155).

9.2 SUBSTANTIVE LAW

9.2.1 Property Right in Water

The unappropriated water of every natural stream belongs to the public (N.M. Const. Art XVI). Water flowing in a natural stream is not subject to private ownership (Albuquerque Land and Irr. Co. v. Gutierrez, 10 N.M. 177, 61 P. 35, 1900). Any private rights which do attach are strictly usufructuary rights to take the water into physical possession and apply it to a beneficial use (Snow v. Abalos, 18 N.M. 681, 140 P. 1044, 1914).

After the water right is vested and has been diverted into the ditch and reduced to possession, the water is owned as tenancy in common among the several parties (Snow v. Abalos, 18 N.M. 681, 140 P. 1044, 1914).

The New Mexico Supreme Court has held that water which is reduced to possession becomes personal property (Hagerman Irrigation Co. v. McMurry, 16 N.M. 172, 113 P. 823, 1911). However, in State ex rel State Game Commission v. Red River Valley Co. (51 N.M. 207, 182 P.2d 421, 1945), the New Mexico Supreme Court held that stored water was public water until it was beneficially applied. The issue was whether the public could participate in fishing and other recreational activities with respect to waters which were impounded by a dam which crossed a public stream.

The right which an appropriator gains is a private property right which is subject to ownership and disposition (New Mexico Products Co. v. New Mexico Power Co., 42 N.M. 311, 77 P.2d 634, 1937). This right is an interest in real property (Posey v. Dove, 57 N.M. 200, 257 P.2d 541, 1953). An action to quiet title to an appropriative right and to establish the right to divert and use water is in the nature of an action to quiet title to real estate (Pecos Valley Artesian Conservancy District v. Peters, 52 N.M. 148, 193 P.2d 418, 1948).

9.2.2 Acquisition of Right

Anyone desiring to acquire the right to the beneficial use of the public waters of New Mexico must make application to the State Engineer for a permit to appropriate before beginning construction (N.M.S. §75-5-1).[6] After filing an application, the applicant must publish notice of the application once a week for three consecutive weeks in a newspaper of general circulation on the stream system (N.M.S. §75-5-4). Upon receipt of all required documents and hearing evidence from interested parties, the State Engineer will determine if unappropriated water is available. If water is available, the application will be approved and the appropriator will be permitted to begin work (N.M.S. §75-5-5)[7] The permit states the times within which construction is to be completed and the water put to beneficial use. On or before the dates set for the completion of construction or beneficial use, the works will be inspected by the State Engineer. Upon satisfactory completion of the inspection, a license to appropriate will be issued which conforms to the permit (N.M.S. §75-5-12).[8] The priority relates back to the initiation of the appropriation if perfected with due diligence (N.M. Const. Art. XVI, §2).

In cases where the appropriation is for irrigation, the permit and the license will allow a rate of diversion consistent with good agricultural practices (N.M.S. §75-5-1 to 75-5-37).

This method of appropriation of public waters of New Mexico is now the exclusive method by which a right can be acquired (N.M.S. §75-5-1 to

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[5] See Clark, Robert Emmet, New Mexico Water Resources Law, 1964, p. 25.

[6] The application requires a statement by the applicant indicating the amount of water to be used and the period or periods of annual use along with any data necessary to describe specifications or the like showing the method and practicability of any construction.

[7] Construction time is a maximum of 5 years plus an allowable 4-year extension.

[8] The license is needed as the permit is only a tentative right to proceed.

75-5-37).[9] The priority of the appropriator's right dates from the time the right was initiated (N.M.S. §75-5-1). However, under a very limited set of circumstances, it is still possible to acquire a water right using traditional methods of appropriation. This right exists only for waters which are a part of a natural stream or watercourse. The exception to the permit system was noted in a decision involving two ranchers who sought a determination of rights to water in a draw which formed a common boundary between their lands. Neither of them had a permit from the State Engineer to appropriate water. The trial court dismissed their action as being premature in that their failure to get a permit was a failure to exhaust administrative remedies (May v. Torres, 86 N.M. 62, 519 P.2d 298, 1974).

The New Mexico Supreme Court held that common law appropriation would suffice in this case. The court held that only the "waters of every natural stream or watercourse belongs to the public" (N.M. Const., Art. XVI, §2; and N.M.S. §75-1-1). If the draw involved was not a natural stream or watercourse, then the Water Code requiring a permit to appropriate was not applicable.

Ground Water--

Underground water is the property of the public in New Mexico and is subject to appropriation for beneficial use (N.M.S. §75-5-1).[10] New Mexico statutes impose the doctrine of prior appropriation on ground water usage (see Yeo v. Tweedy, 34 N.M. 611, 286 P. 970, 1929; and State ex rel Bliss v. Dority, 55 N.M. 12, 225 P.2d 1007, 1950).

There are two procedures for appropriating ground water in New Mexico.[11] The choice of procedure depends on the amount of water desired (in the case of irrigation), or upon the use to be made of the water. Any person, firm, or corporation desiring to use underground water for livestock, for household, or other domestic uses or for irrigation of not more than one acre of noncommercial trees, lawn, or garden, may do so after making application to the State Engineer. The State Engineer "shall issue a permit to the applicant to so use the waters applied for" on the filing of such an application (N.M.S. §75-11-1). No prohibition against injuring or impairing existing rights is found in this part of the statute. Presumably, the small amounts of water used in these uses would not impair existing rights. This is an assumption that would be subject to question in populous areas.

If a person, firm, corporation, or the state of New Mexico wants to use underground water in an amount not to exceed three acre-feet for a period not to exceed one year for prospecting, mining, the construction of public works, highways or roads, or drilling operation for developing natural mineral resources, the applications found in New Mexico Statutes, Section 75-11-3 (1953) shall be used.[12] Separate applications must be made for each proposed use, whether in the same or in different basins. After these applications are filed, the State Engineer must examine the facts. If it is determined that the proposed use will not permanently impair existing rights of others, "he shall grant the application" (apparently, "application" is used in the same sense as "permit" in Section 75-11-1). If existing rights will be impaired,[13] then the State Engineer will publish notice and provide for a hearing on the proposed application.[14]

In cases where the appropriation is for more than three acre-feet of water for irrigation, or where the proposed appropriation is for industrial uses, a person, firm, or corporation must again make application to the State Engineer. If the application is approved, the permit and the verified statement shall be recorded in the office of the County Clerk of the county within which the land is located (N.M.S. §75-11-3(c)). If objections or protests are filed within the time prescribed in the notice, or if the State Engineer is of the opinion that the permit should not be issued, the application may be denied with or without a hearing (N.M.S. §75-11-3(7).

The definition of the word "permit" in New Mexico is apparently synonymous with single approval of an application. In other words, the permit does not imply an agreement between the state and the user which cannot be revoked for a violation of its terms.

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[9] See also Farmers' Development Co. v. Rayaldo Land and Irr. Co., 28 N.M. 357, 213 P. 202, 1923.

[10] See also N.M.S §75-11-2, stating that beneficial use is the basis, the measure and the limit to the right to the use of underground waters.

[11] See Rules and Regulations--Governing Drilling of Wells and Appropriation and Use of Ground Water in New Mexico, from the Office of the State Engineer, 1966.

[12] The application must designate the particular source from which the water is to be appropriated, the beneficial use to which it will be applied, the location of the proposed well, the name of the owner of the land on which the well is to be located, the amount of water applied for, and, if the use is irrigation, the description of the land to be irrigated and the name of its owner. If the land on which the well is located is privately owned and the applicant for the well is not the land owner or does not own or is not the lessee of the mineral or oil and gas rights under the land, then the application must be accompanied by an acknowledged statement executed by the owner of the land on which the well is proposed to be located to the effect that the applicant is granted access across the land to the proposed drilling site and has permission to occupy such portion or portions of the owner's land as is necessary to drill and operate the proposed well. The provisions for this acknowledged statement do not apply to the state of New Mexico.

[13] The question of impairment of existing rights is in fact a question to be decided on a case-by-case basis. It has been held, for example, that a lowering of the water level in a nonrechargeable basin which lowered the water tables of prior appropriators which increased their pumping costs and lowered their yields was not an impairment of their rights as a matter of law. See Mathers v. Texaco, Inc., 77 N.M. 239, 421 P.2d 771. It has also been held that a "negligible effect" on surrounding artesian wells does not mean as a matter of law that the surrounding artesian wells were impaired. See City of Roswell v. Berry, 80 N.M. 110, 452 P.2d 179.

[14] The notice is to be published in a newspaper of general circulation in the county where the proposed well is to be located. It must appear once a week for three consecutive weeks.

Prescriptive Water Rights--
There is some question in New Mexico as to whether a water user may lose a water right to another by adverse possession. One decision of the New Mexico court concluded that no right had been acquired by adverse possession, and questioned whether "such a right can be acquired under our law" (State ex rel Erickson v. McLean, 62 N.M. 264, 308 P.2d 983, 1957). It would seem from the forfeiture statute that there could be no adverse possession in New Mexico as the water would have already reverted to the public by nonuse, and not to the adverse possessor.

Preferences--
New Mexico has no statutory preference system for water users.

9.2.3 Adjudicating Water Rights

New Mexico has a statutory procedure for the adjudication of all water rights on a stream system in order to determine all existing rights in a single action. This would seem to include pre-1907 rights, post-1907 rights, Pueblo rights and any rights administered under the community ditch or "acequia." For this adjudicatory proceeding, the State Engineer is to prepare a hydrographic survey and investigate each stream or other water source. Upon completion of this survey, a copy is delivered with all other necessary data in the State Engineer's possession to the Attorney General. The Attorney General, at the request of the State Engineer, initiates an action in behalf of the state to adjudicate the rights of the affected water users.

If the suit is initiated by a private party, the Attorney General may intervene in behalf of the state if the public interest requires it. Upon completion of the proceedings, the district court enters a decree which contains all elements necessary to define individual water rights (N.M.S. §75-11-8(a).

The decree resulting from the adjudication is prepared and filed with the office of the State Engineer. The cost of this is borne by the parties to the adjudication. The decree is to declare the priority, amount, purpose, periods, and place of use, and as for water used in irrigation the specific tract of land to which the right shall be appurtenant, together with such other conditions as may be necessary to define the right and its priority are included in the decree (N.M.S. §75-4-8). Rights of people who cannot be located may be adjudicated after publishing notices to such people by publication (N.M.S. §75-4-6).

This procedure has been held to include the rights claimed by appropriators from artesian basins within a river system (N.M.S. §75-4-6(B).

There are additional ways in which conflicts may be resolved. To approve an application to appropriate water, the State Engineer must determine if there is unappropriated water in the source (N.M.S. 75-5-5). Disputes arising between applicants and the owners of established rights on a system over a finding of the State Engineer must be resolved. This may be accomplished by the State Engineer after protests are filed and a hearing is held. Parties dissatisfied with the decision of the State Engineer may appeal this decision to the District Court. This appeal, however, is limited to questions involving an abuse of discretion (Fellows v. Shultz, 81 N.M. 496, 469 P.2d 141, 1970).[15] Certain conflicts may therefore be resolved at the time a new right is initiated (N.M.S. §75-6-1 to 75-6-3). This does not foreclose subsequent action by an owner of a water right. The water owner may maintain an action for damage (Tevis v. McCrary, 72 N.M. 134, 381 P.2d 208, 1963), or seek injunctive relief if a right may be impaired (Harkey v. Smith, 31 N.M. 521, 247 P. 550, 1926).

9.2.4 Conditions of Use

Beneficial Use--
Beneficial use is limited to the amount of water needed for a particular use. The duty of water in each case is to be determined by the State Engineer. The appropriative right is a right to divert a quantity of water from a stream for beneficial use (Snow v. Abalos, 18 N.M. 681, 140 P. 1044, 1914). In State ex rel Reynolds v. Miranda (83 N.M. 443, 493, P.2d, 409), the court held that:

> A man-made diversion is necessary to the establishment of a water right for agricultural purposes; it was not enough that the claimant and his predecessors had turned cattle into a natural wash to graze or to cut the grass produced by occasional natural drainage.

The amount of water an appropriator has a right to use is measured by the quantity of water actually put to beneficial use (N.M.S. §75-5-17).[16]

New Mexico statutes place a limitation on all rights in that the State Engineer is instructed not to allow diversion of more water for irrigation than can be used consistently with good agricultural practices to produce the most effective use of the water (N.M.S. §75-5-17). This follows from the constitutional limitation on a water right to that amount beneficially used (N.M. Const., Art XVI, §3). What is to be considered by the State Engineer in determining the proper duty of water is not set forth by statute. However, the New Mexico Court has indicated some of the factors to be determined in a consideration of the proper duty of water. These include: (1) the amount of water diverted; (2) the place of diversion as related to use; (3) the amount necessary for a particular crop or land; (4) the season of the year; and (5) the general irrigation or water use practices followed in the area (State ex rel Reynolds v. Mears, 86 N.M. 510, 525 P.2d 870, 1974).

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[15] Formerly, the legislature had permitted a trial de novo in the appeal from a decision of the State Engineer. This was held to be an unconstitutional delegation of power to the courts as it would have substituted judicial action for administrative action based on expertise. It was also held that the reviewing court could not hear new evidence in addition to that heard by the State Engineer.

[16] This statute changed the duty of water concept from the former position of limiting water to one cubic foot per second for every 70 acres of land to the present position of defining theduty of water in terms of actual beneficial use.

[17] This section formerly provided a duty of water allowance not to exceed one cubic foot per second for 70 acres delivered on the land.

When measuring the duty of water from a well supply, it is measured at the well and not on the land where the water is used (*State ex rel Reynolds v. Lewis*, 84 N.M. 768, 508 P.2d 577, 1973). This includes any carriage loss to be accounted for as well.

Beneficial use concepts preclude excessive diversions of water made in an attempt to maintain a water right (*State ex rel Erickson v. McLean*, 62 N.M. 264, 308 P.2d 983).[18]

This constitutional provision merely declares the basis of the right to the use of water, and does not prohibit the regulation of the enjoyment of that water (*Harkey v. Smith*, 31 N.M. 521, 247 P. 500, 1926; *Snow v. Abalos*, 18 N.M. 681, 140 P. 1044, 1914). The appropriation statute encompasses the concept of beneficial use as the controlling measure of the right to appropriate water:

> In the issuance of permits to appropriate water for irrigation or in the adjudication of the rights to the use of water for such purposes, the amounts allowed shall not be in excess of the limits imposed by the amount of water allowed by permit or by adjudication. The State Engineer shall permit the amount allowed to be diverted at a rate consistent with good agricultural practices, and which will result in the effective use of the available water in order to prevent waste (N.N.S. §75-5-17).

This statute was a major change in the water law of New Mexico. It removed the duty of water concept embodied in a certain amount for a certain number of days depending on the use of the water. One decision held that "it is the beneficial use that is of primary importance, not the particular purpose of ultimate use to which the water is put" (*Kaiser Steel Corp. v. W. S. Ranch*, 986, 1970). The implications for salinity control are clear, for good agricultural practices cannot include practices which leach salt from the earth and deposit in the water supply (*State ex rel Reynolds v. Mears*, 86 N.M. 510, 525 P.2d 870, 1974).

Waste--

The waste of water can be considered as the opposite of using the water beneficially. An appropriator is not allowed to waste water (*Snow v. Abalos*, 18 N.M. 681, 140 P. 1044, 1914). Waste water is that water which has been used by a prior user which has left his lands and goes upon the lands of another, or otherwise becomes available for use by another, without returning to a natural watercourse. Subsequent users of waste water cannot complain if this source is curtailed or eliminated. Water cannot be diverted in excess of good agricultural practices and the use must be effective in order to prevent waste (N.M.S. §75-5-17). An appropriator cannot use any water in excess of his beneficial use requirement and junior appropriators are entitled to use any excess water (*Worley v. United States Borax and Chemical Corp.*, 78 N.M. 112, 428 P.2d 651, 1967). The owner of an irrigation right is liable for injury willfully or negligently inflicted by unnecessary use of the water (*Stroup v. Frank A. Hubbel Co.*, 27 N.M. 35, 192 P. 519, 1920).

> What may be a reasonable beneficial use where water is present in excess of all needs would not be a reasonable beneficial use in an area of great scarcity and need, and that what is beneficial use at one time may, because of changed conditions, become a waste of water at a later time (Trelease, 1957, pp. 1, 14, 16).

It is a public nuisance for an artesian well to be allowed to waste water (N.M.S. §75-12-7)[19] The owner who permits the waters of such a well to be wasted is guilty of a misdemeanor (N.M.S. §75-12-9).[20] It is unlawful to conduct artesian water through any ditch, channel or conduit so as to permit more than a 20% loss from the point of appropriation to the point of beneficial use (N.M.S. §75-12-9). It is unlawful to use artesian water for the purposes of stock watering except where the water is carried through pipes to watering troughs fitted with fleat feeds or other means of control to prevent waste (N.M.S. §75-12-11).

9.2.5 Manner in Which Rights May be Adversely Affected

Forfeiture and Abandonment--

New Mexico statutes provide that when the owner of a water right fails to beneficially use all or part of an appropriation for a period of four years, the unused water reverts to the public and is considered unappropriated water (N.M.S. §75-5-26 and 75-11-8). The legislature has amended the forfeiture statute with respect to nonuse. After 1965, forfeiture can only occur after four years of nonuse and one year's notice from the State Engineer (N.M.S. §75-5-26 and 75-11-8). The law provides that a forfeiture will not necessarily occur if circumstances beyond the control of the owner have caused the shortage of water and erosion of a channel making it difficult to get water to irrigated land. Where water fails to reach an appropriator's point of diversion, there will be no loss of water rights (*New Mexico Products Co. v. New Mexico Power Co.*, 41 N.M. 311, 77 P.2d 634, 1937 (drought conditions excuse nonuse); *Jones v. Anderson*, 81 N.M. 423, 467 P.2d 995, 1970 (water failing to reach appropriator will not cause forfeiture)).

A holder of a permit to appropriated underground water will forfeit the right for continued nonuse for four years. This forfeiture also carries the one-year notice requirement (N.M.S. §75-4-2 to 75-4-11). One year extension periods may be granted by the State Engineer upon a showing of good cause (*State ex rel Reynolds v. Sharp*, 66 N.M. 192, 344 P.2d 943, 1959).

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[18] An excessive diversion of water, through waste, cannot be regarded as a diversion to beneficial use. He who excessively diverts through waste is appropriating to himself that which belongs to others.

[19] Waste is defined as causing, suffering, or permitting any artesian water to reach any pervious stratum above the artesian stata before coming to the surface of the earth, or causing, suffering, or permitting any artesian well to discharge unnecessarily upon the surface of the ground, unless said waters are to be placed to a beneficial use under the constant supervision of the person using such water, or his employee, and through a constructed irrigation system. N.M.S. §75-12-6. The exceptions to the above rule are ornamental ponds and fountains.

[20] The elements of traditional appropriation doctrine law are not dead. For example, a man-made diversion is necessary to establish a water right for agricultural purposes; it is not enough to let cattle graze in a natural wash to claim a right to the water necessary to grow the grass. See *State ex rel Reynolds v. Miranda*, 83 N.M. 445, 493 P.2d 409.

As an example of nonuse which has resulted in forfeiture in New Mexico, an owner of an artesian well who simply allowed it to run uncontrolled over grazing land had his right forfeited as a nonbeneficial use of water (State ex rel Reynolds v. South Springs Co., 80 N.M. 144, 452 P.2d 478, 1969). This case turned on the fact that it was a nonbeneficial use, however, there is a good argument that it was wasting the water and so the court could easily have based its decision on the policy of prohibiting the waste of the state's water.

There is a fundamental difference between forfeiture and abandonment. A forfeiture occurs by nonuse of water. The intention of the appropriator is immaterial. An abandonment, however, cannot occur without an intent to abandon or forsake the right (State ex rel Reynolds v. South Springs Co., 80 N.M. 144, 452 P.2d 478, 1969). Failure to use the water for an unreasonable time cannot in itself result in an abandonment of the right. It may, however, be construed as evidence of an intent to abandon (Pioneer Irrigating Ditch Co. v. Blashek, 41 N.M. 99, 64 P.2d 388, 1937).

Adverse Possession--
Water rights cannot be lost by adverse possession (State ex rel Erickson v. McLean, 62 N.M. 264, 308 P.2d 983, 1957).

Condemnation--
Any person may exercise the power of eminent domain to acquire right of ways for the construction, operation, and maintenance of facilities for the storage and conveyance of water for beneficial purposes (N.M.S. §75-1-3).

Individuals are given the power to condemn land and water because the right to use water for irrigation purposes is a public use (Young v. Dugger, 23 N.M. 613, 170 P. 61, 1918). An existing canal may be enlarged by condemnation by someone other than the owner to carry additional water (N.M.S. §75-5-14). However, a city was prevented from condemning a community acequia because the ditch was already devoted to a public purpose (Albuquerque v. Garcia, 17 N.M. 445, 130 P. 118, 1913).

Enforcement of Beneficial Use or Waste Concepts--
An appropriator is limited to the quantity of water specified in his permit that is being beneficially used and any unused water is subject to the forfeiture statute. The State Engineer will not allow to be diverted more water than is consistent with good agricultural practices and will result in the most effective use of available water, to prevent waste (N.M.S. §75-5-17). Therefore, an owner of a water right cannot use water in excess of his beneficial use requirements (State ex rel Community Ditches v. Tularosa Community Ditch, 19 N.M. 352, 143 P. 207, 1914).

Any water not beneficially used for four years is subject to forfeiture and reversion to the public. The user is given notice by the State Engineer and is given one year to beneficially use the water. In effect, it takes five years before the water is forfeited.

9.2.6 Legal Incentives and Disincentives for More Efficient Water Use Practices

Irrigation Return Flow--
A downstream senior appropriator is entitled to have the stream flow in a sufficient quantity to satisfy his appropriation. Thus, an upstream junior appropriator cannot use water if that use would deprive the downstream senior of his appropriated quantity.

> Artificial surface waters as distinguished from natural surface waters are hereby defined for the purpose of this act as waters whose appearance or cumulation is due to escape, seepage, loss, waste, drainage, or percolation from constructed works either directly or indirectly and which depends for their continuance upon the acts of man. Such artificial waters are primarily private and subject to beneficial use by the owner or developer thereof, provided that when such waters pass unused beyond the domain of the owner or developer, and are deposited in a natural stream or watercourse, and has been applied to beneficial use by the owner or developer for a period of four years, from the first appearance thereof, they shall be subject to appropriation and use provided that no appropriator can acquire the right excepting by contract, grant, dedication, or condemnation as against the owner or developer compelling him to continue such water supply (N.M.S. §75-5-25).

This statute is significant in that tailwater would fall under this definition and would, therefore, be subject to capture and reuse by the owner of the irrigation works causing the tailwater to accumulate. It is of further significance in that it provides that a downstream user who has appropriated the water cannot force the owner to continue the practice which allowed it to accumulate. Thus, one who is presently irrigating in such a manner as to waste water or to apply excess water to his fields resulting in a salinization of the stream cannot be compelled to do so, and in fact has the right to stop the use and capture any excess and reuse it or recycle it. Thus, this statute appears to be a very significant weapon in any battle against salinity in return flows.

There appears, however, to be a conflict in New Mexico law. While the appropriator is entitled to beneficial use requirements, the waste of water is not permitted (Snow v. Abalos, 18 N.M. 681, 140 P. 1044, 1914).[21] Junior appropriators are entitled to use and rely on excess water coming to them from an upstream senior appropriator as the source of their appropriation (State ex rel Community Ditches v. Tularosa Community Ditch, 19 N.M. 352, 143 P. 207, 1914; Worley v. United States Borax and Chemical Corp., 78 N.M. 112, 428 P.2d 651, 1967).

The concept that junior right holders are entitled to use excess water from an upstream user results from the assumption that once water seeps below the surface of the land, it loses its private character and becomes public water subject to appropriation (Applications of Langenegger, 64 N.M. 218, 326 P.2d 1098, 1958).

The State Engineer will approve applications for permits under conditions which would allow considerable return flows to loser users if their rights will not be adversely affected (N.M.S. §75-5-28).

Salvaged and Developed Waters--
Implementation of new irrigation practices could result in a savings of water. However, appropriators

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[21] See also N.M.S. §75-5-17 which permits the State Engineer to restrict a diversion in order to prevent waste.

who have relied upon return flows are given protection by law and cannot be deprived.

Additional water, if increased by virtue of the labor of the appropriation through more efficient practices or capturing water before it leaves the appropriator's control, is the property of the person who develops or salvages it (Millheiser v. Long, 10 N.M. 99, 61 P. 111, 1900; Keeney v. Carillo, 1 N.M. 431, 1883).

Provision for Transfer of Water Rights and Diversions--Water rights may be transferred (N.M.S. §75-5-24),[22] or leased (N.M.S. §75-40-1 to 75-40-7). Under these statutes, a right holder may transfer water from one place on a stream to another. An appropriator could transfer or lease part of a water right to a point downstream to satisfy the junior appropriators. Extra income generated by such practices would encourage better irrigation practices.

The owner of a water right appropriation may change the use of the water, the point of diversion, the place of storage, or the use of the water without losing priority (Dewsnup, 1973, p. 520). The right to change the above incidents of use is inherent in the property right found in a water right (Clodfelter v. Reynolds, 68 N.M. 61, 358 P.2d 626, 1961; Lindsey v. McClure, 136 F 2d 65) Changes must, however, be accomplished without injury to others (see Templeton v. Pecos Valley Artesian Conservancy Dist., 65 N.M. 59, 332 P.2d 465, 1958).

What constitutes impairment of existing rights is not clear in case law. Early decisions emphasize any impairment. In Heine v. Reynolds, which involved an application to change the location of a well and the place of use, the application was denied due to a finding that there would be increased salinity in the water basin as a result of increased pumping caused by the new well. The court specifically rejected the argument of the applicant that "impairing existing rights" should be read as "substantially impairing existing rights" (69 N.M. 398, 367 P.2d 708, 1962).

In Mathers v. Texaco (77 N.M. 239, 421 P.2d 771, 1967), however, there was undisputed evidence that the proposed new withdrawal would lower the level of the basin, would decrease the productivity of existing wells, and would result in increased pumping costs. The New Mexico Supreme Court held that these effects would not constitute an impairment of existing rights. This court rejected the position that any impairment was sufficient. Instead, they relied on the very position that they rejected in Heine, that the harm had to be substantial.

Following the Mathers decision, the New Mexico court rejected the claim that reducing the water level of an aquifer 16 feet constituted actionable impairment. Again, the Heine position was upheld but rejected as it applied to the facts. The court reasoned that "negligible impairment" did fall under the statute (80 N.M. 110, 452 P.2d 179, 1969).

The latest utterance by the New Mexico Court rejected a petition to resist a change in place of diversion on the grounds that there would be a change in the aquifer or river as a result of the change (82 N.M. 416, 483 P.2d 297, 1971). The court, by implication, rejected the Heine decision which relied on the language of the statute.

There have been several cases dealing with changes in points of diversion. The issue concerns what differentiates a change in point of diversion from a new appropriation. The cases deal primarily with the interrelationship of ground and surface rights. These cases were a result of permitting a surface user to supplement existing water supplies from ground water in lieu of a traditional priority call.

The above solution, while postponing the inevitable, has complicated the problem. The issue arises out of a sense of equity, a view of economic loss, and a strict application of the law. The situation existed in many areas where very old surface water rights existed. In times of shortage, the junior appropriators were forced to cease demands in order that the senior rights would not be impaired. Often, however, there were ground water users pumping in the area with priorities junior to surface rights. It was inequitable to force the junior surface appropriators to discontinue use while ground water pumping continued. It would have caused economic havoc to discontinue ground water flows to restore surface flows. Yet, it was unlawful for a senior appropriator to suffer a water shortage in the face of water being delivered to junior users.

In an early case involving a proposed change in a point of diversion (Application of Langenegger, 64 N.M. 218, 326 P.2d 1095, 1958), the applicants source of water was seepage from constructed works. When the source of the seepage was discontinued, the appropriator sought a permit to drill a well. The court held that the applicant's appropriation was not public water, that the permit would be to tap a new source and that it should be denied.

In this case, the New Mexico Supreme Court seemed to confuse the types of water available. It first held that the source was public water as it had entered the ground. This was consistent with other cases. The court reversed itself, however, and declared this to be private water. It further confused the issue by stating that this water was on the surface and artificial as it was private. Other cases have held that once water escapes into the ground it is public and subject to appropriation.

This case created confusion in light of "follow the source" cases, because the appropriator could not follow seepage to its source--in this case a reservoir--and thereby get a reservoir right.

Another view of the problem was presented in Templeton v. Pecos Valley Artesian Conservancy District (65 N.M. 59, 332 P.2d 465, 1958). This case involved an application to change a point of diversion from a surface right to a well right. The facts of the case indicated that the river from which the prior surface right was fulfilled was formed as a result of artesian pressure from the surrounding land. The river had very little water in its surface flow except for that water being pushed up from the underground aquifer.

Because of extensive well drilling in the surrounding area, the level of the aquifer had been lowered to a point which impaired the surface rights of the applicant. The application sought to permit the owners of the surface rights held prior to the wells to move their points of diversion upstream to a well so that their water right could be fulfilled.

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[22] The water may be severed from the land to which it is appurtenant without loss of priority if it is transferred to other lands. N.M.S. §75-5-22.

The issues of the case were whether the source of the water was the same and whether the owner of a water right, in order to fulfill an appropriation, had the right to follow the source.

The change was permitted by the New Mexico Supreme Court. The court noted that granting the change would only restore the water right as the water received would have been received had it not been for the later wells. It was the same source of water into which all users tapped even though some held surface rights and others held well rights.

The court found no impairment of existing rights though it conceded this to be a fact questioned in every case. It noted that water rights are taken subject to all prior appropriation from a source. This "subject to" dictum has not been relied upon in later cases. Rather, language forbidding a change if existing rights will be impaired has emerged. This is inconsistent with the "subject to" language found in *Templeton*, for it is clear that one of the incidents of a water right is the ability to change the point of diversion if he will harm existing rights even those junior to him--then it is clear that the strict "subject to" language is not being followed.

Of greater significance regarding future cases is the statement that an appropriator is entitled to rely on all sources which feed the main stream. This was dictum in *Templeton* because the source involved was a common source for all the water in question. This is not always the situation.

The *Templeton* view of water as a hydrologic whole has been strained in later decisions. In *Reynolds v. Wiggins* (74 N.M. 670, 397 P.2d 469, 1964), the applicant sought to take drainage water, inject it into a well, and recover it later. The State Engineer denied the application on the ground that no unappropriated water remained. The decision is unclear in that the applicant sought only to ask to recover what was injected into the well.

In *Durand v. Reynolds* (75 N.M. 497, 406 P.2d 817, 1965) 1965), the applicant sought to drill a well to satisfy a prior right. The application was refused. The court stated that a change could only be permitted where there would be impairment of existing rights. The applicants argued that the water desired came from the same source so there could be no impairment. The court replied on two levels.

First, it held that simply because water was taken from the same source did not necessarily mean that there would be no impairment of existing rights.[23] The court noted that fluctuations might occur in an uneven fashion which would impair existing rights. For the application to be approved, the applicant must first show even fluctuation throughout the basin.[24] This the applicant failed to do.

Secondly, the applicant failed to show that the water on which the new diversion would draw was the source of the existing right. To grant a change in the point of diversion would be to place the applicant on a completely new source. This would be a grant of a new right rather than a change of an old one.

The court ignored the "subject to" dictum of *Templeton* and relied upon the applicant's failure to show that existing rights would not be impaired and that the source of water was the source for the existing right.

The issue was further clouded in *Kelley v. Carlsbad Irrigation District* (76 N.M. 446, 415 P.2d 849, 1966). In this case, the applicant for change had a surface right above a reservoir. The applicant who had never taken water from the reservoir proposed to let surface water flow into the reservoir. The applicant then sought to capture it by drilling a well into the aquifer below the reservoir. In essence, the applicant wanted to use the ground as an underground storage area and transportation system.

The court refused the application. First, it noted that the aquifer below the reservoir had been fully appropriated. To the argument that the applicant merely wanted to have the same water but in a different place, the court replied that once the water percolated into underground, it lost its identity as the applicant's water and was subject to appropriation. The decision makes little sense if water is viewed hydrologically as one system. It seems to be a distinction without a difference to say that one can go up a stream to find the same source of water, as in *Templeton*, but cannot let water flow downstream and recapture it.

The most recent change of diversion area decision is *Langenegger v. Carlsbad Irrigation District* (82 N.M. 416, 483, P.2d 297, 1971). In this case, the applicants' rights to irrigation water had been endangered because of pumping from the basin within which their well was located. The case involved two water storage areas, one overlying another. The area closer to the surface was supplied by the deeper one by artesian pressure. The applicants wanted to drill into the deeper well to fill their entitlement. The court allowed the change saying that, subject to the limitations that other rights not be injured, the prior user could rely on *all* sources of the main stream back to the beginning of the watershed. This was an expansion of *Templeton* which dealt with pursuing the source.

The *Durand* case was distinguished in that it dealt with a situation where the applicants had failed to show that the source to be tapped was the actual supply of the present right.

The common assumption in all the cases is that existing rights must not be injured. The prior user should have the right to shut down the other users until his right is filled rather than be forced to look for a change in point of diversion. However, the effect of the cases is to impose upon a senior appropriator the burden of seeking a permit to drill a supplemental well, rather than granting him the traditional benefits of a priority call.

In W. S. Ranch Co. v. Kaiser Steel Corporation (388 F.2d 257)[25] the court held:

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[23] Existing rights "include rights both junior and senior to the right seeking a change in point of diversion." See "Groundwater Law and Administration: A New Mexico Viewpoint," by F. Harlan Flint, Proceedings of the Fourteenth Annual Rocky Mountain Mineral Law Institute, Tucson, Arizona, July 13, 1968, p. 557.

[24] The court cited *In Re Hobson*, 64 N.M. 462, 330 P.2d 547, 1958, for this proposition.

[25] Reversed and remanded on other grounds, 391 U.S. 593, 88 S. Ct. 1753.

> A prior court decree which had adjudicated the water rights in a stream system could be accepted as proof of the amount of water actually applied to a beneficial use by a junior appropriator which was sought to be transferred by changing the point of diversion to a place above that of a senior appropriator, even though the junior appropriator had not made an affirmative showing that the maximum use to which it was entitled had been applied to a beneficial use and that a transfer could be made without detrimental effects to existing rights.

The effect of these provisions is to give the State Engineer great powers over water management within the state. These powers emerge from control over the granting of a water right, transfers of rights, changes of use, and changes in points of diversion.

9.2.7 Waste Water Disposal and Drainage

There is no statute in New Mexico which gives the right to use diffused surface water. Walker v. New Mexico and S.P.R.R. (165 U.S. 593, 1897) held that a landowner has a right to capture and use such water. However, an upper owner may not artificially collect diffused surface water and discharge it on his lower neighbor (Rix v. Town of Alamagordo, 42 N.M. 325, 77 P.2d 765, 1938).

Drainage water flowing in artificial drainage systems had been held to be the property of the owner of the works so long as it is confined to the owner's property (Hagerman Irr. Co. v. East Grand Plains Drainage Dist., 25 N.M. 649, 187 P. 555, 1920). While the owner of an irrigation right is not required to use water in such a manner that no irrigation runoff reaches lower lands, the appropriator is responsible for injuries willfully or negligently inflicted by unnecessary use of the water (Stroup v. Frank A. Hubbel Co., 27 N.M. 35, 192 P. 519, 1920). This holding seems to be significant in the area of salinity control in that one who knowingly uses more water than is consistent with good irrigation practices may have created an actionable situation in that the injury (through increased salinity) has been negligently inflicted by the unnecessary use of water.

9.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

9.3.1 State Water Agencies

The State Engineer is the principle officer charged with the administration of water rights. The State Engineer has the duty of administering water to right holders. One of the prerequisites for meeting this duty is the ability to adequately measure water flows. Accordingly, every ditch owner must upon request of the State Engineer, construct and maintain a substantial headgate at the point of diversion. The appropriator may be required to construct a measuring device, of a design approved by the State Engineer, for measuring and apportioning water (N.M.S. §75-5-19). This power extends only to points of diversion within the state, not to waters flowing into New Mexico from a diversion point outside the state (Turley v. Furman, 16 N.M. 253, 114 P. 273).

The State Engineer has the powers of general supervision of waters of the state of New Mexico and of the measurement, appropriation and distribution thereof (N.M.S. §75-2-1 and 75-2-9). On appeal, the actions and decisions of the State Engineer are presumed to be corredt (State v. Myers, 64 N.M. 186, 326 P.2d 1075, 1958). This presumption can, of course, be rebutted (State v. Myers, 64 N.M. 186, 326 P.2d 1075, 1 1958).

The waters of the state of which fall under the supervision of the State Engineer include waters apportioned to users under license and those water rights which have been adjudicated by the courts (N.M.S. §75-2-9). The State Engineer also has the authority to adopt regulations to implement and enforce any provision of the law (N.M.S. §75-2-8).

The State Engineer may refuse to approve an application for surface water if approval would be contrary to the public interest (N.M.S. §75-5-5 and 75-5-6). The court, in an early case, concluded that matters of public interest encompassed an evaluation of the facts and circumstances surrounding competing proposals for water use to determine which proposal better serves the public interest (Young and Norton v. Hinderlider, 15 N.M. 666, 110 P. 1045, 1910).

9.3.2 Judicial Bodies

New Mexico does not have special water courts. Courts enter into the adjudication of water rights. Appeal from State Engineer's decisions is to the district court for a trial de novo (N.M.S. §75-6-1 to 3).

Districts--
Districts are corporations with a public purpose. These districts differ from counties and like political units in that they function for profit and are set up for business, not governmental purposes. Irrigation districts may be organized by filing a petition with the Board of County Commissioners. If there is insufficient water for all, then the Board of Directors may distribute it as they think best (N.M.S. §75-22-33).

Conservancy districts are organized to prevent floods, regulate stream channels, regulate stream flow, and protect lands from inundation. Petitions must be filed with the Clerk of Court and signed by more than 1/3 of the owners of a proposed district.

9.4 POLLUTION CONTROL

New Mexico has passed a Water Quality Act (N.M.S. §75-39-1 to 75-39-12), imposing a permit system for the discharge of any contaminant, either directly or indirectly, into water (N.M.S. §75-39-4.1). A Water Quality Control Commission has been established (N.M.S. §75-39-3), with the power to grant or deny permits for such discharges. The grounds for refusal include failure to meet state or federal standards (N.M.S. §75-39-4.1) regarding effluent regulation and stream standards (N.M.S. §75-39-4.1).

Permits are issued after application and a hearing held following notice to the public (N.M.S. §75-39-4.1). The permits are limited to a term of five years and may have conditions imposed upon them. Provisions included in these conditions are requirements for the installation of effluent monitoring devices sampling effluents at prescribed locations and intervals. This is to provide records of the nature and amount of effluent and the performance of control devices (N.M.S. §75-39-4.1).

The permit may be terminated for violation of its conditions, for obtaining it by misrepresentation, or failing to disclose relevant facts. It may also be revoked for violation of any applicable state or federal effluent regulation. Violation of any section of the Water Quality Act constitutes a misdemeanor punishable by one year in jail or by a fine of not less than $300 nor more than $10,000 per day.

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APPENDIX A REPORT 10

NORTH DAKOTA

10.1 HISTORICAL BACKGROUND

The State of North Dakota is seventeenth in size with an area of 70,655 square miles. It receives an average annual precipitation of 17 inches and withdraws from ground and surface sources approximately 900 million gallons of water per day for irrigation on the 74,000 acres of irrigated acreage (Geraghty, 1973).

North Dakota water law was distinguished by its recognition of both riparian rights and appropriation rights. The common law and riparian rights doctrine in North Dakota date back to its territorial days. The Territorial Legislature adopted in 1866 the following statute which stood in force until 1963.

> The owner of land owns water standing thereon or flowing over or under its surface, but not forming a definite stream. Water running in a definite stream formed by nature over or under the surface may be used by him as long as it remains there; but he may not prevent the natural flow of the stream or of the natural spring from which it commenses its definite course, nor pursue nor pollute the same (N.D.C. §47-01-13).

This provision seems to depict the doctrine of absolute ownership of subterranean percolating waters and diffused surface waters. Waters flowing in a definite stream, whether over or under the ground, was, however, subject to the doctrine of riparian rights under a usufructuary use theory as opposed to an absolute theory. The above statute was repealed in 1963 by North Dakota Session Laws, Ch. 419, Sec. 7 (1963).

Another provision enacted in 1866 by the Territorial Legislation stated that:

> Any person who may have or hold a title... to any mineral or agricultural lands within the limits of this Territory, shall be entitled to the usual enjoyment of the waters of the streams or creeks in said Territory for mining, milling, agricultural or domestic purposes: Provided that the right to such use shall not interfere with any prior right or claim to such waters when the law has been complied with... (Laws of Territory of Dak., Ch. 142,§1, 1881).[1]

This statute seemed to grant the right to any landowner to use waters of the state as long as he did not interfere with prior rights. Acquisition of water rights was not limited to riparian or overlying lands.

In Sturr v. Beck, the North Dakota Supreme Court upheld the right of a riparian landowner to enjoin any interference with water riparian to his property by a nonriparian appropriator where the riparian owner's chain of title and possession predated the nonriparian appropriation. The court, in this case, referred to the water rights as "vested and accrued" (133 U.S. 541, at 552, 1896).

The doctrine of prior appropriation was added to North Dakota's water laws in 1881. Then in 1889, North Dakota included in its newly adopted constitution, Section 210, which stated that: "All flowing streams and natural watercourses shall forever remain the property of the state for mining, irrigating and manufacturing purposes" (N.D.C. Art. 17, 210).

The Supreme Court of North Dakota dealt with the effect of Section 210 upon riparian rights doctrine in Bigelow v. Draper (6 N.D. 152, 69 N.W. 570, 1896). The Court felt that Section 210 had not abrogated those rights and observed that the right to a reasonable use of the stream by the riparian owner was just as much his property as the land itself (Ibid. at 573). By virtue of the common law doctrines in force in Dakota Territory at the time of statehood, riparian owners were vested with specific property rights in the beds and in the water itself. These rights were protected by the 14th Amendment of the United States Constitution and could not, therefore, be impaired except by due process of law. The court stated that Section 210 would itself be unconstitutional if it attempted to destroy these vested property rights.

As set down by the Supreme Court of North Dakota, the uses to which a riparian owner could put the water included manufacturing, agricultural and similar purposes (McDonough v. Russell-Miller Milling Co., 38 N.D. 465, 165 N.W. 504, 1917). The right to have a stream flow "in its natural quantity and purity" is subject to the right of reasonable use by each riparian owner and reasonableness is a question of fact for the Court to decide (Ibid., at 472).

The above case concerned a riparian owner involved in the ice business who had been cutting ice from the river and selling it. The defendant, an upper riparian owner, had a flour mill on the river from which sufficient wastes from washing wheat allegedly were deposited in the river to render the water unusable for ice purposes, thus destroying the plaintiff's business. The Court stated that, "The right to the use of the water in its natural flow is not a mere easement or appurtenance, but is a natural right inseparably annexed to the soil itself, which arises immediately with every new division or severance of ownership" (Ibid. at 472).

The Court went on to hold that a riparian owner has the right to make a reasonable use of a mill or factory and may even cast sewage or waste materials therein, if he does not thereby cause material injury to public or private rights.

In 1905, the North Dakota Legislative Assembly passed a statute reinforcing the appropriation doctrine first introduced in 1881 (N.D. Session Laws, Ch. 34, 1905). This was done ostensibly for the purpose of aiding irrigation. The essence of the appropriation doctrine was that any person needing water for beneficial use may divert water for such use and would thereby acquire a vested right to continue such use regardless of whether or not the appropriator had riparian rights in the water. Thus, priority in time plus a beneficial use, rather than location of land, gave the better right.

The 1905 statute declared that "all water within the limits of the state from all sources of water supply belong to the public and, except as to navigable waters are subject to appropriation for beneficial use (N.D. Session Laws, Ch. 34, 1905). Amendments in 1955 and in 1957 enlarged the scope of the 1905 act. The 1957 amendment reads as follows:

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[1] Reinforced in 1889 by N.D. Sess. Laws, Ch. 173, which first introduced the concept of filing for water rights.

> All waters within the limits of the state from the following sources of water supply, namely: 1) Waters on the surface of each excluding diffused surface waters but including surface waters whether flowing in well defined channels or flowing through lakes, ponds, or marshes which constitute integral parts of a stream system, or waters in lakes; and 2) Waters under the surface of the earth whether such waters flow in defined subterranean channels or are diffused percolating underground waters; and 3) All residual waters resulting from beneficial use, and all waters artificially drained; and 4) All waters, excluding privately owned waters, in areas determined by the state engineer to be noncontributing drainage area is hereby defined to be any area which does not contribute natural flowing surface waters to a natural stream or watercourse at an average frequency oftener than once in 3 years over the latest thirty-year period; belong to the public and are subject to appropriation for beneficial use and the right to the use of these waters for such use shall be acquired pursuant to the provisions of Chapter 61-04 of the Revised Code of North Dakota of 1943 and acts amendatory thereof (N.D.C. §61-01-01).

From 1905 and until the repeal of the statute which had enbodied the riparian rights doctrine, North Dakota recognized both the riparian rights and appropriation doctrine. North Dakota made a sweeping change in its water law system in 1963, repealing sections of the law providing for the future initiation of riparian rights and instituting the doctrine of prior appropriation as the sole means of acquiring a right to use water (N.D. Sess Law 1963, Ch. 417). To emphasize the awareness of potential water problems, the North Dakota legislature enacted Section 61-01-26 in 1965, setting forth the following state water resources policy:

> In view of legislative findings and determination of the ever-increasing demand and anticipated future need for water in North Dakota for every beneficial purpose and use, it is hereby declared to be the water resources policy of the state that:
>
> 1. The public health, safety and general welfare, including without limitation enhancement of opportunities for social and economic growth and expansion, of all of the people of the state, depend in large measure upon the optimum protection, management and wise utilization of all of the water and related land resources of the state;
> 2. Well-being of all of the people of the state shall be the overriding determinant in considering the best use, or combination of uses, of water and related land resources;
> 3. Storage of the maximum water supplies shall be provided wherever and whenever deemed feasible and practicable;
> 4. Accruing benefits from these resources can best be achieved for the people of the state through the development, execution and periodic updating of comprehensive, coordinated and well-balanced short- and long-term plans and programs for the conservation and development of such resources by the departments and agencies of the state having responsibilities therefore;
> 5. Adequate implementation of such plans and programs shall be provided by the state through cost-sharing and cooperative participation with the appropriate federal and state departments and agencies and political subdivisions within the limitation of budgetary requirements and administrative capabilities;
> 6. Required assurances of state cooperation and for meeting non-federal repayment obligations of the state in connection with federal-assisted state projects shall be provided by the appropriate state department or agency;
> 7. Required assurances of local cooperation and for meeting non-federal repayment obligations of local interests in connection with federal-assisted local projects may, at the request of political subdivisions or other local interests, be provided by the appropriate state department or agency, provided if for any reason it is deemed necessary by any department or agency of the state to expend state funds in order to fulfill any obligation of a political subdivision or other local interests in connection with the construction, operation or maintenance of any such project, the state shall have and may enforce a claim against the political subdivision or other local interests for such expenditures.
>
> The provisions of this chapter shall not be construed to in any manner limit, impair or abrogate the rights, powers, duties, or functions of any department or agency of the state having jurisdiction or responsibilities in the field of water and related land resources conservation, development or utilization (N.D. Sess. Law 1965, Ch. 455,§§1 and 2).

In 1968, the Supreme Court of North Dakota, in Baeth v. Hoisveen (157 N.W. 2d728, N.D. 1968), accepted the concept that although a riparian owner had rights in the water, these rights were vested only if the riparian owner made actual use of the water for a beneficial purpose. Until the time of such use, the appropriator may acquire a better right. The defendant felt that there was no unconstitutional deprivation of property despite the language of Bigelow v. Draper. The court held that a landowner had no vested right to unused ground water and that the prior appropriations provision of the 1963 law were not a deprivation of property without due process of law.

In Volkmann v. City of Crosby (120 N.W. 2d18, N.D., 1963), the North Dakota Supreme Court stated that the rights of the landowner protected by 1963 statute relating to subterranean waters not forming a definite stream (N.D.C. §47-01-13, 1960, repealed by N.D. Sess. Laws, Ch. 419, §7, 1963), are no less than those rights which he would have in definite streams flowing on the surface.

10.2 SUBSTANTIVE LAW

10.2.1 Property Right in Water

The North Dakota Century Code Section 61-01-01 states that all waters in the state belong to the public and are subject to appropriation for beneficial use (N.D.C. §61-01-01). The two exceptions to this are diffused surface waters in contributing drainage areas and privately owned waters. Privately owned waters are defined as those waters which have been physically separated from their natural condition so as to become personal property; i.e., water held in private tanks, basins, or receptacles in which there is no flow or drainage in the natural manner.[2] Thus, private rights of ownership do not attach to the corpus of the water if it remains in the stream in its natural state.

In North Dakota, both riparian and appropriative rights are the historical basis of water use, but all new uses are appropriative. The appropriative right is an usufructuary right and its basis is beneficial use (N.D.C. §61-01-02). This usufructuary characteristic of the water right grants the owner a right to "use" the water which is the nature of the property right, and not the right to "own" the water (Sherred v. City of Baker, 63 Ore. 28, 125 p. 826, 1912).

For ownership purposes, the water right is a real property right, which has the condition that its existence depends upon use according to the terms of the right.

> An appropriation of water flowing on the public domain consists in the capture, impounding, or diversion of it from its natural course or channel and its actual application to some beneficial use (Black's Law Dictionary, 4th edition).

The appropriator is entitled to a continuing right to the use of such waters that have been appropriated, but not beyond that reasonably required and actually used (Arizona v. California, 56 S. Ct. 848, 298 U.S. 558). However, once the water has been used, "all" residual waters resulting from beneficial use and all waters artificially drained...belong to the public and are subject to appropriations..." (N.D.C. §61-01-01 (3)).

Water rights for irrigation purposes are appurtenant to the land applied for (N.D.C. §61-01-02). Section 61-04-15 requires approval by the state engineer prior to any transfer of other lands,[3] and the fact that the water rights pass with the title to the land unless severed previously.

10.2.2 Acquisition of Right

General--
An application for a permit for a beneficial use must be filed with the State Engineer and if approved, it will result in a conditional and/or perfected water permit (N.D.C. §61-04, 1960, as amended Supp. 1975). The applicant for a permit must give notice by certified mail to all owners of real estate within a one-mile radius of the applicant's proposed appropriation. The notice must also designate the time the application will be heard by the commission (N.D.C. §61-04-04 and 61-04-05).

A permit is not required by the landowner or his lessee for domestic and livestock uses (N.D.C. §61-01-01.1). If water is to be used for domestic livestock or fish, wildlife and other recreational purposes, it is not a prerequisite to obtain a permit to construct works, but once constructed, the State Engineer must be notified of the location and acre-feet capacity of such works. However, if the impoundment is for more than 12½ acre-feet capacity, a permit is required prior to construction (N.D.C. §61-04-02).

Permits must be denied if, in the State Engineer's opinion, no unappropriated water is available or if approval of the permit would be contrary to the public interest (N.D.C. §61-04-07). Where the application has been rejected by the engineer, the applicant may seek immediate judicial review (N.D.C. §61-04-07). If unappropriated water is available, the State Engineer shall endorse his approval on the application and issue a conditional water permit (N.D.C. §61-04-06). This permit authorizes the appropriation of water and is to specify the time in which the water is to be applied to beneficial use. Applications are generally reviewed by the State Water Conservation Commission before approval by the State Engineer.

The State Engineer will inspect the project upon completion of the construction and application of the water to a beneficial use. If the terms of the conditional permit are met, the applicant will be issued a perfected permit to appropriate the specific quantity which is being beneficially used (N.D.C. §§61-04-09 to 61-04-14).

It is a misdemeanor to begin or carry on any construction of works for storing or carrying water until after the issuance of a permit to appropriate such waters, except in the case of construction carried on under the authority of the United States (N.D.C. §61-14-08).

Ground Water--
Public waters include waters under the surface of the earth whether such waters flow in defined subterranean channels or are diffused percolating waters (N.D.C. §61-01-01). There is no delineation between underground streams and percolating waters, and both are subject to appropriation for a beneficial use under the same procedures which apply to surface waters.

Artesian wells must be controlled by a valve and the flow regulated to provide for a quantity of water which can be used beneficially (N.D.C. §61-20-01).

Prescriptive Water Rights--
In 1957, the North Dakota Legislature enacted a bill entitled: "Prescriptive Water Rights" (N.D.C. §61-04-22). As amended, the Act now reads:

> Any person, firm, corporation, or municipality which used or attempted to appropriate water from any watercourse, a stream body of water or from an underground source for mining, irrigating, manufacturing or other beneficial use over a period of twenty years prior to July 1, 1963, shall be deemed to have acquired a right to the use of such water without having filed or prosecuted an application to acquire a right to the beneficial use of such waters if such user shall, within two years from July 1, 1963,

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[2] Larson, A Local Review: The Development of Water Rights and Suggested Improvements in the Water Law of North Dakota, 38 N.D.L. Rev. 243, 263 (1962).

[3] N.D.C. §61-14-04 specifically declaring water appurtenant to land for irrigation purposes was repealed in 1963 and §61-01-02 with a like statement was enacted.

> file with the State Engineer an application for a water permit in the form required by the the rules and regulations of the State Engineer, and substantiated by such affidavits and other supporting information as the State Engineer may require. If the State Engineer finds that the application and supporting documents substantiate the claim, he shall approve such application, which shall thereupon become a perfected water permit with a priority date relating back to the date when water in the quantity stated in the application was first appropriated. In the event the prescriptive use shall fail to file with the State Engineer an application for a water permit within two years from July 1, 1963, such prescriptive water right shall be declared abandoned and forfeited. The decision of the State Engineer in rejecting an application made under the provisions of this section may be appealed to the district court in the manner prescribed by section 61-04-07. Within sixty days after July 1, 1963, the State Engineer shall cause to be published in all official county newspapers within the state notice of the deadline of filing for a water permit by prescriptive users. Any such prescriptive water permit acquired under this section shall be subject to forfeiture for nonuse as prescribed by sections 61-04-23 through 61-04-25.

To summarize, North Dakota recognizes prescriptive rights to appropriate water from any source where the water was used for a beneficial purpose for a period of 20 years prior to July 1, 1963. If the permit is granted the priority relates back to the date the water was first used. However, prescriptive right which has been validated continues to be subject to forfeiture for nonuse.

Preferences--
North Dakota uses the term "priority" to refer both to the exercise of water rights, regardless of type of use, according to the date of the water right, and to the ranking of types of uses in which the senior ranking uses have priority over junior ranking uses. North Dakota's ranking of water rights is only applicable to competing applications. The order of "priorities" in all cases where the use of water for different purposes conflicts is domestic use; livestock use; irrigation and industry; fish wildlife and other outdoor recreation (N.D.C. §61-01-01.1).

10.2.3 Adjudicating Water Rights

The resolution of conflicting claims to the use of water is accomplished through statutory adjudication proceedings. The system adopted in North Dakota is commonly called the Bien Code system.[4] Initiation of such proceedings is accomplished by the creation of a hydrographic survey of the water source and uses by the State Engineer. This information is then turned over to the attorney general who initiates suit on behalf of the state. Action may also be initiated by private parties but the attorney general has the right to intervene on behalf of the state (N.D.C. §61-03-16). The decree must describe each right as to priority, quantity, purpose, place, and nature of use (N.D.C. §61-03-19). All claimants to a stream which is being adjudicated must be joined and costs of the litigation are charged to the users (N.D.C. §61-03-18).

10.2.4 Conditions of Use

Beneficial Use--
The Code recognizes beneficial use as the basis, the measure and the limit of the right to use water (N. D.C. §61-01-02), and priority in time confers upon the permit holder the right to cause those junior in time to cease diversions to the extent that their use prevents the senior user from exercising his right The North Dakota statutes do not specifically define beneficial use, but rather designate types of uses for which water can be appropriated. These types of uses are domestic, livestock, irrigation, industry and fish, wildlife and other outdoor recreational uses (N.D.C. §61-01-01.1).

In determining how much water shall be allocated for irrigation purposes, N.D.C. Sec. 61-14-03 sets out "duty of water" criteria to be applied by the State Engineer in issuing permits and courts in adjudicating rights. This "duty" states that:

> In the issuance of a permit to appropriate water for irrigation or in the adjudication of the rights to the use of water for such purpose, the amount allowed shall not be in excess of the rate of one cubic foot of water per second for each eighty acres, for a specified time in each year, or the equivalent thereof, delivered on the land. Provided, that the State Engineer may allow a higher rate of diversion where the method of irrigation stipulated in the permit or the type of soil to which the water is to be applied so requires, but in such event, the total amount allowed shall not be in excess of two acre-feet per acre delivered to the land for any one irrigation season, and in no case more than can be used beneficially, excpet that during periods of sufficient water supply the State Engineer, with the approval of the State Water Commission and in accordance with the method of irrigation being used, the type of soil to which the water is to be applied, and other criteria established by the State Engineer, three acre-feet per acre, per irrigation season, for a specified period of time which in no event shall be of greater duration than the period of sufficient water supply (N.D.C. §61-14-03).

Waste--
The waste of water can be considered the opposite of using the water beneficially. It is the return flows resulting from excessive or overapplication of water and being discharged from surface ditches or ravines on subsurface flows. The North Dakota legislature, very early in their history, recognized the need to prevent misuse of the state's water resources. In 1905, Section 61-14-08 was enacted, which provides:

> The unauthorized use of water to which another person is entitled, or the willful waste of water to the detriment of another, shall be a misdemeanor....

Irrigators are able to recapture return flows while still within their control (N.D.C. §61-01-05). Public policy thus dictates that an upper irrigator should not be forced to continue his waste just to provide a downstream user with a source for an appropriation. When he can improve his use, downstream users do not have a valid claim.

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[4] For discussion, see: Clark, R.E., ed., Water and Water Rights, Vol. 1, Allen Smith & Co., Indianapolis, Inc., 1967, pp. 124-134.

However, improvement of irrigation practices could in some situations result in decreased return flows which could lower the stream to the injury of downstream appropriators. The use of salvaged waters, reuse, or even the application of an entire appropriation could have an adverse effect, not only on downstream users but on water quality itself.

10.2.5 Manner in Which Water Rights May Be Adversely Affected

Forfeiture--

The early provision on forfeiture provided for the loss of water rights after three years of nonuse:

> When the party entitled to the use of water fails for a period of three years to use beneficially, for the purpose for which it was appropriated or adjudicated, all or any part of the water claimed by him, for which a right of use has vested, such unused water shall revert to the public and shall be regarded as unappropriated public water (N.D.C. §61-14-02).

This statute was repealed in 1963 and replaced by Section 61-04-22 to 26:

> All appropriations of water must be for a beneficial or useful purpose, and when the appropriator or his successor in interest ceases to use it for such purpose for three successive years, unless such failure or cessation of use shall have been due to the unavailability of water, a justifiable inability to complete the works, or other good and sufficient cause, the State Engineer may declare such water permit or right forfeited, provided, however, that any such water permit or right held by a state agency, department, board, commission, or institution may be declared forfeited only by the North Dakota legislative assembly. The State Engineer shall, as often as necessary, examine the condition of all works constructed or partially constructed within the state and compile information concerning the condition of every water permit or right and all ditches and other works constructed or partially constructed thereunder (N.D.C. §61-04-23).

North Dakota Code, Sections 61-04-24 and 61-04-25, set down the procedure for notice, hearings and appeal for forfeiture actions. If the State Engineer declares a water right forfeited, he shall file a copy of the order with the registrar of deeds in the county or counties where the land to which the affected water right is appurtenant is located (N.D.C. §61-04-26).

North Dakota's three-year forfeiture provisions have an extensive flexibility for contesting loss by an affected party and thus may not be too effective in operation. It is interesting to compare the absolute forfeiture provision that was repealed in 1963 with the sections enacted in 1963. This appears to be a step backward to striving for maximum use of the state's water resources.

Adverse Possession--

Prescriptive rights can be acquired if the water was used openly, notoriously and continuously for a beneficial purpose for a period of 20 years before July 1, 1963. The user must have filed for a permit by July 1, 1965 or the right was regarded as abandoned forfeited.

Condemnation--

In a context relating to real property, condemnation is a process by which the property of a private owner is taken for public use, without his consent, but upon the award and payment of just compensation (Black's Law Dictionary). Under North Dakota law, the U.S., any person, corporation or association can exercise eminent domain (this is the right, condemnation is the process) to acquire any property or rights for a public use when it is determined necessary for applying water to beneficial use (N.D.C. §61-01-04).

Water rights can be condemned by the State Water Conservation Commission (N.D.C. §61-02-22, 1960, 61-02-23 Supp., 1975; see also §61-01-04 and 61-02-40). The Commission is allowed to sell, lease, or distribute the water developed by its projects. It can also establish rules and regulations governing the sale of water and regulate, supervise and control water supplies to prevent the pollution of watercourses within the state. The Commission has full control over the unappropriated waters of the state (N.D.C. §61-02- 30). It is not required to initiate a right to use water by filing an application but must file a declaration in writing with the State Engineer, describing the water claimed.

Enforcement of Beneficial Use or Waste Concepts--

An appropriator is limited to the quantity of water specified in his permit subject to a beneficial use. If the appropriator fails to apply the specified quantity in his permit to a beneficial use, the unused water is subject to the provisions of the forfeiture statute (N.D.C. §61-04, 1960, as amended Supp. 1973).

While waste water is not statutorily defined, it may be referred to as that water which is now lost under current systems and practices but which might be saved.[5] It is a misdemeanor to willfully waste water to the detriment of another.

10.2.6 Legal Incentives and Disincentives for More Efficient Water Use Practices

Irrigation Return Flow--

Irrigation return flows occur from deep percolation, seepage from conveyance systems, and tail water runoff. A downstream senior appropriator is entitled to have the stream flow in a sufficient quantity to satisfy his appropriation. An upstream junior appropriator cannot therefore use water if that use would deprive the downstream senior of his appropriated quantity. There have been no cases in North Dakota dealing with the appropriation of waste waters. There is, however, a statute which deals with the appropriation of seepage waters and another providing for the reclaiming or reuse of water.

In the cases of seepage water from any constructed works, any party desiring to use such waters shall make application to the State Engineer and shall pay to the owner of the constructed works a reasonable charge for the storage or carriage of the waters in such works if the appearance of such seepage water can be traced beyond a reasonable doubt to the storage or carriage of water in such works. The State Engineer cannot issue a permit to appropriate such seepage waters until an agreement for the payment of appropriate charges shall have been entered into by the affected parties (N.D.C. §61-14-13).

Reuse is encouraged in North Dakota. Water diverted into artificial or natural watercourses by any party entitled to the use of such water may be reclaimed and diverted by the appropriate party subject to existing rights (due allowances being made for losses) as determined by the State Engineer (N.D.C. §61-01-05).

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[5] R.L. Dewsnup, Legal Aspects of Water Salvage (report to the National Water Commission, 1971).

Salvaged and Developed Waters--
There are no cases in North Dakota dealing with the right to use salvaged waters. However, the reuse statute cited above and the lenient forfeiture provisions imply the use of salvaged and developed waters is encouraged.

Provisions for Transfer of Water Rights and Diversions--
In 1940, the Supreme Court of North Dakota held that riparian rights may be severed from the land by contractual agreement, at least to the extent of possible future claims against the other contracting party and that such a contract is binding upon subsequent owners (Johnson v. Armour and Co., 69 N.D. 769, 291 N.W. 113, 1940).

The North Dakota Century Code has several provisions dealing with the transfer of water rights. Specifically pertaining to irrigation water rights, the Code states in Section 61-14-05:

> Any appropriator of water may use the same for a purpose other than that for which it was appropriated, or may change the place diversion, storage, or use, in the manner, and under the conditions prescribed in §61-14-04.[6]

The process for transferring water rights is set out in N.D.C. Section 61-04-15. The section specified three types of water right transfer situations. The first allows for an assignment of a conditional or perfected irrigation water right upon approval of the State Engineer. The second allows the transfer of any conditional or perfected water right to other parcels of land owned by the water right holder upon approval of the State Engineer. And the third permits the temporary assignment or transfer for any use of a water right held by any state agency, department, board, commission, or institution for a specified term upon approval of the State Engineer. If the State Engineer determines that existing rights will not be harmed by the requested transfer and no party raises sustainable objections within sixty days in the appropriate district court, he shall approve the transfer or assignment without loss of priority date of the water right.

Transfer of title to land carries with it all rights to the use of water appurtenant to that land for irrigation purposes, unless the rights have already been severed from the land.

10.2.7 Water Disposal and Drainage

In 1967, the North Dakota Supreme Court in Jones v. Boeing Co. stated:

> We adopt the reasonable use rule as expressed in the New Jersey case of Armstrong v. Francis Corp. (20 N.J. 321, 120 A.2d 4, 1956)....The casting of surface waters from one's land upon the land of another under circumstances where the resulting damage was foreseen or foreseeable, is tortious and liability results if the interference with the flow of surface water is found to be unreasonable under 'reasonable' use rules. The issue of reasonableness or unreasonableness becomes a question of fact to be determined in each case upon a consideration of all of the relevant circumstances (153 N.W. 2d 897, 900 to 904, N.D., 1967).

The circumstances may include such factors as the amount of harm caused, the foreseeability of the harm which results, the purpose or motive with which the possessor acted, and all other relevant matters. In 1971, the North Dakota Supreme Court reaffirmed the reasonable use rule (Jacobsen v. Pederson, 190 N.W. 2d 1, N.D., 1971). Generally, a landowner must not so use his land as to unreasonably interfere with or injure another. This is the basic sic utere (nuisance principle).

10.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

10.3.1 State Water Agencies

In 1905, North Dakota set up an elaborate administrative scheme for allocation of water rights, distribution of water under the rights and administration of the water laws (N.D. Laws of 1905, Ch. 34, §37 to 46). The administration was handled at the statewide level by a Board of Water Commissioners, with the State Engineer as president. Beneath this Board were various levels of administration in a declining hierarchy, beginning with water divisions, then water districts, water commissioners, and watermasters. The system was too extensive for the state's needs, and was deleted from the statutes in 1943 when the state published its Revised Code.

Presently, there are two entities at the state level responsible for water quantity law matters. They are the Office of the State Engineer and the Water Conservation Commission. The former office was retained from the 1905 provisions of the law (N.D.C. Ch. 61-03). The State Engineer has the primary duties of allocating water, and adjudicating water rights subject to approval of the Commission (N.D.C. §61-02-03). The substantive procedures for appropriating water rights from the State Engineer are set out in Chapter 61-04, and he has the responsibility for promulgating necessary rules and regulations for carrying out this and other duties provided in the statutes (N.D.C. §61-03-13). His rules and regulations are, however, subject to the scrutiny by the Commission, and may require alteration at their direction (N.D.C. §61-03-14). From the agricultural water use viewpoint, the State Engineer is important as his office is responsible for allocating the water under permit, including a determination of the amount of water needed according to soil type and water availabilities (N.D.C. §61-14-03), and for approving transfers of water rights (N.D.C. §61-04-15). The criteria he applied in these matters may well be more critical to creating an incentive or impediment to efficient water use than the statutes themselves.

The second office, the Water Conservation Commission, is a high level policy body also with extensive functional duties in water allocation, and distribution and adjudication of water rights (N.D.C., Ch. 61-02). The Commission is charged with the supervision and control of waters (public or private, navigable or nonnavigable, surface or subsurface), the control of floods and the regulation of water pollution (N.D.C. §61-02-01, 1960). The Commission's role is to investigate, construct, maintain, and regulate as needed in the area of water conservation and control. It is a public corporation with the power to contract in its own name as well as hold and dispose of property (N.D.C. §61-02-09 and 61-02-14, Supp. 1973). For irrigation projects undertaken by the Commission for irrigators, the Commission can even prepare the land for irrigation (N.D.C. §61-02-19). The Commission has full control over the unappropriated waters of the state (N.D.C. §61-02-29) and can acquire water rights for the state in such waters (N.D.C. §61-02-30).

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[6] Section 61-14-04 referred to in 61-14-05 was repealed by S.L. 1963, Ch. 417, 26.

The Commission is the most essential organization in the state for insuring that the state waters are being fully utilized under appropriate methods and without resulting harmful effects. It has the power to plan, construct and operate public or private projects to control the low flow and flood flow of streams, to conserve and develop unappropriated waters within a watershed, and even divert waters to other basins, to improve stream channels for more efficient water conveyance, to provide sufficient flow for stream pollution abatement and to promote or provide drainage to agricultural lands injured from utilization of irrigation water (N.D.C. §61-02-14).[7]

An economic (market) system of selling water and water rights is acceptably implied in the statutes, for the Commission also has power to make rules and regulations for "sale of waters and water rights to individuals, corporations, municipalities, and other political subdivisions of the state and for delivery of water to users" (N.D.C. §61-02-14(2a)).

10.3.2 Judicial Bodies

North Dakota does not have special water courts.

10.3.3 Water Users and Their Organizational Structure

Individuals--
This term denotes a single or natural person as distinguished from a group or class, partnership, corporation or association (Black's Law Dictionary, 4th Edition). The purpose in providing for appropriation of waters is to subject waters of the state to acquisition of rights of diversion and use by the public. The individual water right holder thus has a real property right which allows the use of water according to the terms of the permit. The individual, however, has a corresponding duty not to commit waste nor to cause injury to others from his use of the water.

Private corporations may be created to establish irrigation systems for the distribution or sale of water to its members (N.D.C., Ch. 61-13). The by-laws may make provisions which require that the share of stock can only be transferred with the sale or transfer of the land (N.D.C. §61-13-03). These private corporations serve as either mutual or commercial irrigation companies and have the same rights and duties as a private individual for the use of the state's water.

Delivery--
In order to obtain an appropriative right, there must be an actual diversion or taking of water from a channel. An appropriation of water flowing on the public domain consists in the capture, impounding, or diversion of it from its natural course or channel and its actual application to some beneficial use (Black's Law Dictionary, 4th Edition). All waters in the state, except diffused waters, belong to the public and are subject to appropriation for beneficial use (N.D.C. §61-01-01).

The scope of the appropriative right is limited by the amount specifically appropriated and by the amount which is being or can be beneficially used (N.D.C. §61-01-02). An application for a permit must be filed with the State Engineer, and if approved, it will result in a conditional and perfected water permit (N.D.C. §61-04, 1960, as amended, Supp. 1975).

The requirement that there must be an actual diversion is related to the necessity of perfecting a property right which will be given protection under the law and to obtain an exact measurement of the property to be protected. To preserve one's "property" rights in the water, an appropriator must not discontinue his use for three consecutive years (N.D.C. §61-04-23).

Use--
Beneficial use is the basis, the measure and the limit of the right to use water. The above concept could be a valuable tool if strict enforcement should become necessary to show exactly what is being posited. For example, assume that an appropriator makes a decision to grow a crop which will not require as much water as the appropriator has available to him. If the appropriator fails to use all of his appropriation he could lose the water. Good water management as well as the beneficial use concept dictate that the appropriator apply only that water which the crop requires, but the "use it or lose it" philosophy confronts the appropriator with the possible unused portion.

Removal--
Water turned into any natural or artificial watercourse by any party entitled to the use of such water may be reclaimed below and diverted therefrom by such party, subject to existing rights, due allowance for losses being made, as determined by the State Engineer (N.D.C. §61-01-05).

Districts--
All persons (corporations, voluntary organizations and associations), when concerned with any agreement, contract, sale, or purchase, or the construction of any works which involve the use and disposition of any water or water rights under the jurisdiction of the State Water Conservation Commission, shall present to the Commission all proposals with respect to the use or disposition of any such waters before making any agreement, contract, purchase, sale, or lease in respect thereof (N.D.C. §61-02-27).

Irrigation districts are corporations with a public purpose who function for profit but are organized strictly for business and economical purposes; they are not organized for a political or governmental purpose.

Section 61-07-16 obligates an irrigation district to provide for proper drainage of any and all lands embraced within its limits. Section 61-07-32 states that any irrigation district within this state is liable in damages for negligence in delivery or failing to deliver water to the users from its canal.

There are 17 organized irrigation districts in North Dakota of which several have been organized to obtain a water supply through the development of the Garrison Diversion Unit. The other ten have been established to obtain a water supply through the Lower Yellowstone project located in Montana and North Dakota. This project was constructed by the Bureau of Reclamation in 1909.

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[7] This is only a partial listing of the powers and duties; refer to Ch. 61-02 for a complete description of the Commission's role in water control and management.

The seven irrigation districts located in the Garrison Diversion Unit area encompass some 320,000 acres of land and obtain their water supply through the Garrison Diversion Unit where it diverts water from the Missouri River eastward into central and eastern North Dakota. The type of organization used most in connection with irrigation development is that of irrigation districts as public corporations. They are legal entities and have the power to levy special assessments for irrigation costs. Irrigation districts in the state, approved by the State Engineer when the petition from the landowners of the irrigable lands to be served by the districts facilities, provide a practical and economically sound proposal. As political subdivisions of the state, they have definite geographical boundaries that are set forth in chapter 62-05 of the North Dakota Code relative to the organization of irrigation districts.

The procedure followed in organizing a district requires that a petition for the proposed district be filed with the State Engineer which shall be signed by the landowners of the district who together shall own a majority of the whole number of acres subject to assessment for construction or other costs of the district (N.D.C. §61-05-07).

The jurisdiction of the State Engineer in accepting the petition and instituting proceedings for the organization of the irrigation district based on this petition has been established in decisions of the North Dakota Supreme Court in the Fort Clark Irrigation District in Oliver and Mercer Counties (78 N.D. 107, 48 N.W. 2d 741, 1951). The State Engineer is required under Section 61-05-10 of the North Dakota Century Code to examine the petition and other data relative to the proposed district, to fix a time and place for a hearing on the petition, and to follow the procedure thereafter required.

This procedure is set forth in Section 61-07-01; each irrigation district: 1) shall be a body corporate; 2) shall possess all powers and duties usual to corporations organized for public purposes and those confered on it by law; 3) may sue and be sued in its corporate name; 4) may contract and be contracted with; 5) may hold leave, own and possess such real or personal property as shall come into its possession by contract, conveyance, purchase, gift, or otherwise; and 6) exercise the right to eminent domain for the purpose of acquiring right-of-way for ditches, canals, sites for dams and reservoirs, and for any purpose necessary to establish and construct a complete system of irrigation works.

While the North Dakota Century Code makes no clear distinction between a drainage district and a drainage project, it is reasonable to conclude that a drainage district comprises the lands within a county that are benefitted by a drainage project (N.D.C. §61-21-10, 61-25-65, and 61-21-56).

The North Dakota statutes define a drain as including any natural watercourses, open or to be opened and improved, for drainage purposes, and artificial drains of all kinds "...including dikes and appurtenant works ..." (N.D.C. §61-21-01(1), 1960). Projects for draining slough and other low lands may be established under the police power of the state when such draining is "...conducive to the public health, convenience, or welfare" (N.D.C. §61-21-02, 61-21-10, 1960).

Within each county, a board of three drain commissioners, appointed by the Board of County Commissioners, is authorized to carry out drainage projects. The Board of Drain Commissioners may be appointed by a majority vote of the Board of County Commissioners either on the Commissioners' own motion or in response to the petition of an interested person. Board members are appointed to staggered three-year terms (N.D.C. §61-21-03).

North Dakota statutes provide that a water management district board of commissioners has all the authority of a drain board (N.D.C. §61-16-11(11). However, there are few drain boards remaining in the state.

10.4 POLLUTION CONTROL

North Dakota's Water Pollution Control Board was established in 1967. It consists of ten members made up from various state departments and private interest groups (N.D.C. §61-28-03). The Board may in cooperation with the State Health Board adopt water quality standards and the Act has civil and criminal sanctions to secure compliance (N.D.C. §61-28-05 and 61-28-08). The powers of the Board include the development of a comprehensive program to prevent, abate and control both new or existing pollution. The Board's powers include issuance of orders prohibiting or abating discharges of wastes into the waters of the state and to require the construction of new disposal systems or the modification of existing systems to prevent and control pollution (N.D.C. §61-28-04).

REFERENCES

Geraghty, J., D. Miller, F. Van der Leeden, and F. Troise, Water Atlas of the United States, Water Information Center, Port Washington, N.Y., 1973.

APPENDIX A REPORT 11

OKLAHOMA

11.1 HISTORICAL BACKGROUND

Oklahoma is a semi-arid to sub-humid state of 69,919 square miles which diverts approximately 820 million gallons per day to irrigate some 620,000 acres of land. The state receives precipitation ranging from 50 inches in the southeast to 22 inches in the west and as low as 15 inches in the panhandle with an average for the state of 32 inches. The Upper Arkansas-Red and Lower Arkansas-Red-White drainage basins comprise the entire state. The two major rivers are the Arkansas and Red Rivers (Geraghty, 1973).

Due to the wide range of precipitation found throughout the state, both the riparian and appropriation doctrines for water allocation and use were adopted and operated simultaneously.

The natural flow theory of riparian rights was adopted in 1890 along with the recognition of private ownership of diffused surface waters (Terr. Okla. Stat. §4162, 1890, repealed in 1963). The basic appropriation statute was enacted in 1897. It has subsequently been amended and revised in 1905, 1963, and 1972. Today, Oklahoma is basically an appropriation state. The recognition of riparian rights, however, creates a mild state of confusion.

The Oklahoma Supreme Court rejected the natural flow theory and adopted the reasonable use theory in Baker v. Ellis (292 P.2d 1037, Okla. 1956) and Broady v. Furray (163 Okla. 204, 21 P.2d 770, 1933). These cases concerned the method of adjudicating rights between riparians. Riparians were given the right to make use of water as long as other riparians were not substantially or unreasonably damaged.

Prior appropriation was first recognized in 1897 (Laws Terr. Okla. ch. 19 art. I, 1897). This early law provided that water, including ordinary and underflow streams and storm waters, was subject to appropriation. The statute, containing the basics of the appropriation theory provided priority in time as establishing a priority of right, beneficial use and the doctrine of relation back. Protection was given riparians regarding ordinary flow and the statute further provided that an appropriator's right be given protection with the one exception that an abutting landowner on a running stream, or a landowner in a watershed, within which storm water collected, was entitled to use the water for domestic purposes.

A new appropriation act, adopted in 1905 (Ibid. ch. 21, 1905), established a permit system in water rights. The act retained the beneficial use limitation, the appurtenancy doctrine, and the doctrine of relation back.

It has not been decided whether the 1905 act provided for an exclusive method of acquiring water rights nor what determinations were to be applied to determine priorities among riparians and appropriators who had claims before or after the 1905 act (Gay v. Hicks, 33 Okla. 675, 124 P.1077, 1912). The Oklahoma Supreme Court held that before a permit (a valid appropriation right) could be issued there had to be both a general adjudication of the rights of all appropriators of the stream and a hydrographic survey (Gates v. Settlers' Millinfi Canal and Res. Co., 190 Okla.83, 81 P.856, 1907).

The 1963 amendments were an attempt to reconcile the existence of both the riparian and appropriation systems. The principal changes were: 1) ground water is to be governed separately; 2) exemptions from the appropriation system included water used for domestic purposes, defined as water used for household purposes, for farm and domestic animals, irrigation of gardens, lawns and orchards not exceeding three acres, and farm ponds constructed under the supervision of the soil and water conservation districts; 3) standing and flowing water which does not form a definite stream may be used by the landowner without a permit and may be dammed and stored in the bed of a definite stream; 4) there is no provision to establish preferences for uses among holders of permits to appropriate; 5) after the effective date of the act, a riparian who wanted to use an amount of water above that needed for domestic purposes must apply for an appropriation right with beneficial use as the basis, measure and the limit of the right to use water (O.S.A. 82 §105.2). The prerequisite of a hydrographic survey and general adjudication before a perfected appropriation right could be obtained was eliminated.

11.2 SUBSTANTIVE LAW

11.2.1 Property Right in Water

In Oklahoma, riparian rights are the historical basis of some uses but all new uses are appropriative. The appropriative right is an unufructuary right, the basis of which is beneficial use (O.S.A. 82 §105.2). Usufructuary is defined as the right of enjoying a thing, the property of which is vested in another, and to draw from the same all profit, utility, and advantage which it may produce, provided it be without altering the substance of the thing (Mulford v. LeFranc, 26 Cal. 102). Increasing the salinity of water may be such an alteration of the substance of the water as to provide a possible approach to the salinity control problem.

Water flowing in a natural stream is declared to be public property, not subject to private ownership. Any rights which do attach are usufructuary rights to take the water from the stream and apply it to a beneficial use. Private rights of ownership do not attach to the corpus of the water as long as it remains in the stream in its natural state.

The right which an appropriator acquires is a private property right subject to ownership and disposition by him just as other kinds of private property, subject to the type and conditions of his permit. In Oklahoma, there are permanent and non-permanent permits to use surface and ground waters. They will be discussed in a subsequent section. The general rule is that one who diverts water under a valid right of diversion and beneficially uses that water, becomes the owner of the particles of water for so long as he retains control over the water in placing it to its intended use. Riparians cannot pollute the streams nor pursue water after it leaves their lands because it has then become subject to appropriation.

> An appropriation of water flowing on the public domain consists in the capture, impounding, or diversion of it from its natural course or channel and its actual application for some beneficial use (Black's Law Dictionary, 4th Ed.).

The appropriator is entitled to a continuing right in the use of waters that have been appropriated, but not beyond that reasonably required and actually used (Arizona v. California, 56 S. Ct. 848, 298 U.S. 558).

Irrigation water rights are appurtenant to the land described in the application for the water right (O.S.A. §105.22). However, it is possible to transfer these rights
of Water Rights and Diversions

11.2.2 Acquisition of Water Rights

Stream Water

New water rights in Oklahoma may only be obtained from the Water Resources Board pursuant to statutory provisions and rules and regulations promulgated by the Board.[1] Water can be appropriated for agricultural, industrial and municipal purposes, power development, construction and operation of city water works, public parks, game preserves, refuges and management areas, propagation and protection of fishery resources, recreation, housing developments, pleasure resorts and water quality control or any other beneficial use, with the amount for each such use specifically stated (O.W.R.B. Rules and Regulations §305.1).

Initiation of a water right begins with an application submitted to the Board on forms provided by it (O.S.A. 82 § 105.9). Any person or legal entity wishing to use any waters of the state must file an application with the Board prior to constructing any works or diverting from existing facilities.

The application contains numerous standard requirements of the applicant to identify the user, type of use, source of supply, and place of use, but has one additional particularly interesting and highly praised feature - it requires that the total amount of water to be appropriated per calendar year be stated in acre feet and the rate of diversion indicated in gallons per minute or c.f.s. This requirement resolves a serious criticism of most direct flow water rights in other western states, where the only measure of the right is beneficial use up to so many g.p.m. or c.f.s. per day. It places an upper limit diversion potential to the appropriative right, which, when taken in conjunction with the priority system and types of permits issued, gives the state a legal basis for not only water allocation and distribution, but a tool for water management as well.

Special regulations exist for irrigation uses of water. The law makes a water right for this purpose appurtenant to the land to which it will be applied. Thus, section 315 of the O.W.R.B. Rules and Regulations requires an accurate legal description to the nearest 40-acre subdivision and statement of the crops to be irrigated. If the land to be irrigated is not owned, evidence of the legal right to use the land must accompany the application.

Once the application has been filed with the Board, other water right holders are notified of the filing and date for a public hearing through publication in newspapers having general circulation in the locality of the proposed appropriation. Interested parties can present objections to application at the hearing.

Hearings on applications are held in the Board's offices. Approval of the application follows only after the Board finds the applicant has a present or future need for the water requested, that unappropriated water exists and that the proposed diversion and use will not interfere with existing water rights (O.S.A. 82, §§105.12, 105.14). Once the application has been approved and the permit fee paid to the Board, a permit will be issued authorizing the holder to proceed under the terms of the permit. If a permit is denied on the basis of no unappropriated water available in the amount applied for but there is water available, the applicant may file an amended application applying for the lesser amount (O.W.R.B. Rule 345).

Oklahoma has a permit system for surface waters consisting of four classes of permits (O.W.R.B. Rule 350). These permits fall into two categories--permanent ("perpetual" in most western states) and nonpermanent. The permanent permits are either regular or seasonal. Under the former, the water user is authorized to appropriate water on a year-round basis from a source and in an amount approved by the Board.

The seasonal permit is the same except that diversions can only take place during specified periods during the calendar year.

Flexibility is built into the Oklahoma surface water law by providing for two types of nonpermanent water rights. A temporary permit can be granted for a period of up to three months from a particular source and in a specific amount by the Board. The Board may also place other conditions in the permit which would allow cancellation by Board notice. The second type of nonpermanent permit is the term permit. This authorizes the permit holder to use a set quantity of water from a particular source for a given number of years. At the end of the fixed term, the right expires.

The priority date of the water right will relate to the date of filing the application provided construction of works begins within two years (unless extended by the Board upon a showing of good cause), and the water put to beneficial use according to the terms of the permit. There is an explicit qualification of the Board's authority, however, with respect to requiring beneficial use under a regular permit. They can not require the whole amount of water to be put to beneficial use within a period of less than seven years. However, if it appears the total amount of water cannot be put to use in seven years, the Board is authorized to provide in the permit a schedule of times when certain percentages must be put to use. This schedule is based on the useful life of a proposed project (O.S.A. 82, §105.16).

For water right claims prior to the enactment of the present law, the statutes provide for determination of priority in the following manner. Priority in time gives the better right. For water right claims prior to June 10, 1963, the statutes provide for a determination of vested right priorities based on prestatehood uses, adjudications, filing of applications, federal withdrawals, and proven beneficial use without an application. From and after 1963, priorities are based upon filing and perfecting an application (O.S.A. 82, §105.2.B).

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[1] The Oklahoma Water Resources Board has issued detailed rules and regulations for acquiring and using surface and groundwaters, procedures to be followed, fees and other relevant matters. See publication number 45, 1973, Oklahoma Water Resources Board, hereafter cited as O.W.R.B. Rules and Regulations.

The law exempts the use of water for domestic purposes from the above procedures and allows up to a two year supply to be stored (O.S.A. 82 §105.2).

There are two other important provisions regarding surface waters. A landowner whose land contains the origin of a spring cannot interfere with the natural flow as to prevent it from reaching a watercourse. Spring waters,which form a natural watercourse,are subject to the same provisions which regulate uses of water from other watercourses. If the spring is not a tributary to a natural watercourse then the owner of the lands upon which the spring originates owns the spring water (O.S.A. 82 § 60).

In Oklahoma, a landowner may use diffused surface waters without regard to downstream users and need not obtain an appropriation permit (Garret v. Haworth, 183 Okla. 569, 86 P.2d 822, 1938).

Ground Water--

In 1890, the Oklahoma legislature adopted a provision which stated a landowner owned the waters under the surface of his property that did not form a definite stream (Okla. Terr. Stat. §4162, 1890). Allocation of this percolating water, however, was based upon the doctrine of reasonable use (Canada v. City of Shawnee, 179 Okla. 53, 64 P.2d 694, 1937). Then in 1949, a major revision of the laws took place in which the doctrine of prior appropriation was adopted for allocation and use of all ground water (Okla. Ground Water Law of 1949, Okla. Law of 1949, p.641). Upon approval of a properly filled out application, the applicant could proceed with the use of the ground waters. Where an area was designated as critical, a permit was issued.

The legislature enacted a new ground water code in 1972 which set forth the following policy:

> It is hereby declared to be the public policy of the State, in the interest of the agricultural stability, domestic, municipality, industrial and other beneficial uses, general economy, health and welfare of the State and its citizens to utilize the ground water resources of the State, and for that purpose to provide reasonable regulations for the allocation for reasonable use based in hydrologic surveys of fresh ground water basins or subbasins to determine a restriction on the production based upon the acres overlying the ground water basin or subbasin. The provisions of this act shall not apply to the taking, using or disposal of salt water associated with the exploration, production or recovery of oil and gas or to the taking, using or disposal of water trapped in producing or nonproducing mines (O.S.A. 82 §1020.2).

The 1972 legislation, which became effective July 1, 1973, instituted a permit system for all ground water withdrawals except domestic uses. One wishing to use ground water for other than domestic purposes must file an application with the Oklahoma Water Resources Board (O.S.A. 82 §1020.7). In addition to meeting standard requirements that identify the user, use and place of use, the applicant must state the total amount of water requested in acre-feet and the withdrawal rate, obtain written permission from the landowner to use the surface to withdraw water from the undergound basins if the applicant does not own the land where the well will be placed and state who adjacent landowners are and if there are other wells within one-half mile or less (O.W.R.B. Rules and Regs. §615.1).

An application properly submitted will be set for public hearing with notice to interested parties published in local newspapers. A finding must be made by the Board that the applicant overlies a ground water basin and that the use will be beneficial. If this can be determined,the permit may be approved.

The Board may issue a regular, temporary or special permit. A regular permit grants the applicant a proportionate share of the maximum annual yield from the basin (O.S.A. 82 §1020.9). This share is a percentage of the total annual yield of the basin prorated by the applicant's leased or owned land overlying the basin. The duration of the permit is no less than the basin's remaining life as determined by the Board.

A temporary permit is similar to a regular permit, but is issued prior to the completion of the hydrologic survey and determination of the basin's maximum annual yield. The amount of water allocated is 2 acre-feet per acre unless the Board is presented evidence that a greater amount will not exhaust the water in twenty years.

The special permit is of limited duration, not to exceed six months nor renewed more than three times. It is for allocation of water quantities in excess of those allowed under a regular or special permit.

The statute provides for well spacing (O.S.A. 82 §1020.17) and protection of vested water rights (O.S.A. 82 §1020.14). The priority date of a ground water right granted under the 1972 law is the date of receipt of application by the Board.

Prescriptive Water Rights--

Oklahoma has no statutory provision dealing with the acquisition of water rights through prescriptive or adverse possession. However,the inapplicability of such concepts can be assumed in that water rights not acquired under statutory provisions or claimed under Section 60 in Title 60 are not recognized (O.S.A. 82 § 105.17).

Preferences--

Oklahoma law does not establish a system of preferences for competing appropriative uses.

11.2.3 Adjudicated Water Rights v. Historical Diversions

Riparian rights are the historical basis of some uses of water. All new uses, however, are appropriative. The resolution of conflicting claims to the use of water is accomplished through statutory adjudication proceedings:

> When the Water Resources Board determines the best interests of the claimants to the use of water from a stream system will be served by a determination of all rights to the use of water of such system, the Board may institute

> a suit on behalf of the state for the determination of all rights to the use of such water and shall diligently prosecute the same to a final adjudication. The cost of such suit, including the costs on behalf of the state, shall be charged against each of the parties thereto in proportion to the amount of water rights allotted. Provided that after the effective date of June 10, 1963, neither the bringing of such suit nor an adjudication in such cases is authorized by this act (O.S.A. 82 §105.6).

Suit may be brought in district court by any person whose right to use water from a stream has been impaired by another's actions (O.S.A. 82 §105.5). The attorney general is required to intervene on behalf of the State in any adjudication if notified by the Water Resources Board that intervention would serve the public interest. The Board may institute a general adjudication in the interests of the water users within a stream system that would be better served by a determination of all of the water rights within the system (O.S.A. 82 §105.6). All persons using water, or who claim a right to use water are to be made parties to the litigation. In any statutory adjudication, water users who are not parties to the suit are not bound by the decree (O.S.A. 82 §105.7). The final decree is to describe the rights of each party regarding: priority, amount, purpose, place of use, and (as to water used for irrigation) the specific tracts of land to which it would be appurtenant. The decree may also include such other conditions that may be necessary to define the right and its priority (O.S.A. 82 §105.8).

11.2.4 Conditions of Use

Beneficial Use--
The legislature of Oklahoma stated that beneficial use shall be the basis, measure and limit of the right to use water (O.S.A. 82 §105.2). Subsequently, the Water Resources Board expanded upon the definition to enable it to carry out its duties in allocating water and administering the law. The Board applies the following definition to both surface and ground water:

> Beneficial use is the use of such quantity of water when reasonable intelligence and reasonable diligence are exercised in its application for a lawful purpose, as is economically necessary for that purpose (O.W.R.B. Rules and Regs. §300.1 (m) and §600.1 (g)).

The Element of Economics and Reasonable Use--
As cited in the preceding quote, the Water Resources Board recognizes that economic feasibility is a legitimate limitation on application practices. The Oklahoma Supreme Court has not utilized the term "economics" to expand the definition of beneficial or reasonable use. Regardless of the term applied, the question addressed is the need not to waste water.

The term "economically" appears in Sec. 82-105.22, which deals with the severance and transfer of a water right. It provides that a transfer will be permitted when it becomes economically impracticable to use the water on lands to which the right is appurtenant.

Waste--
Waste of water can be controlled under the law of Oklahoma either in the process of misusing quantities of water or in the sense that "wastes" pollute waters and thereby make the waters unfit for further beneficial use. The former method of control pertains to the exercise of a water right. A water user is responsible for utilizing the water he diverts in a reasonable and beneficial manner, and may be charged with committing a misdemeanor for each day that such violation occurs (O.W.R.B. Rules and Regs. §385.1 for surface water rights, and §660.2 for ground water rights). In addition to bringing criminal actions for waste, the Board may request the district court to order the enjoining of the practice.

Waste is defined in the Oklahoma statutes as being industrial waste and all other liquid, gaseous, or solid substances which may pollute or tend to pollute any waters of the state (O.S.A. 89 §926.1), and is likewise controlled by the Oklahoma Water Resources Board.

11.2.5 Manner in Which Water Rights May Be Adversely Affected

Forfeiture--
Oklahoma has adopted a statutory forfeiture provision by which the rights to use water may be lost. The approach is unique in its distinction between the failure to commence using water under a permit, and the non-use after the water right was exercised. Under the former case where a right holder did not divert water authorized under a permit and apply it to beneficial use, the amount not used is forfeited and this water is subject to appropriation (O.S.A. 82 §105.19).

The same section of the law provides that where a right holder did commence using water to which he was entitled under a permit, and then fails to exercise all or a part of the water right for seven continuous years, he forfeits his right to divert the unused water quantity and such waters again become public, subject to appropriation (Ibid).

Prior to canceling a water right for non-use, the Water Resources Board must notify the right holder by written notice if possible, or by publication in local newspapers of a hearing on the issue (O.S.A. 82 §105.18). At such hearing, the claimant must show cause why the right in total or part should not be cancelled. A right of appeal to the district court is the claimant's last resort to prevent the loss.

Annual Reports--
Oklahoma has a further unique provision in the agency rules that affects the security of a holder's water right, and conversely, makes administration of the law more efficient and effective. The rules and regulations of the Board places the burden of filing annual water use reports for both surface and ground water rights. The reports, filed on a card mailed by the Board in January of each year to a water right holder, contains data on the nature and extent of water use. The significance is twofold:
(1) an accurate registry of water rights is maintained with the responsibility primarily upon the user, and (2) the wilful failure to complete and return the form may be considered as prima facia evidence of non-use and thus subject the right to forfeiture (O.W.R.B. Rules & Regs. §385.7 and 660.6; O.S.A. 82 §1020.12).

11.2.6 Legal Incentives and Disincentives for More Efficient Water Use Practices

Irrigation Return Flow/Salvaged & Developed Waters--
There have been no cases in Oklahoma directed toward the use of irrigation return flow, salvaged or developed waters. However, as a general proposition, once return flows reach a watercourse, they are available for appropriation by downstream users. If the water is captured by the landowner before escaping his property, he can generally recapture and use it. A provision in the statute does raise a potential problem. The law provides that:

> Water turned into any natural or artificial watercourse by any party entitled to the use of such water may be reclaimed below and diverted therefrom by such party, subject to existing rights, due allowance for losses being made by the Board (O.S.A. 82 §105.4).

Provisions for Transfer of Water Rights and Diversions--
Irrigation water rights are appurtenant to the land upon which the water is applied (O.S.A. 82 §105.22). However, the water right may be severed and transferred to other land without loss of priority if it has become impractical to use the water either beneficially or economically, and the transfer will not be detrimental to other water rights.

The Board has adopted a procedure for processing transfer requests. An application is to be submitted to the Board and notice of intent to transfer published in a newspaper of general circulation in the county(ies) where the land is located (O.W.R.B. Rules & Regs. §3.75). After a hearing on the application, the Board will issue an order denying or granting the transfer. It is the duty of the Board to protect the rights of other water users who entered comments at the hearing.

The same procedure applies to requests for change in point of diversion, storage or use of water (O.S.A. 82 §105.23). An assignment of a water permit is only binding upon the parties to the transaction unless filed with the Board (O.S.A. 82 §105.24). However, no assignment that detaches the water right from the land to which it is appurtenant is permissable unless the previously discussed provisions or transfers are complied with. Further, it is a misdemeanor to commit such a transfer without following the procedure set out above (O.S.A. 82 §105.20).

11.2.7 Waste Water Disposal and Drainage

Disposal of Waste Waters--
The Oklahoma Supreme Court has adopted a modified common enemy rule with respect to the right of adjoining landowners to rid themselves of unwanted surface waters (O.S.A. 82 §105.2). A landowner may use diffused surface waters without regard to downstream users and he does not have to obtain a permit to appropriate (183 Okla. 569, 86 P.2d 822, 1938).

11.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

11.3.1 State Water Agencies

The Oklahoma Water Resources Board is charged with the responsibility for the administration, control and regulation of waters within the state. It has the power to develop a state water plan to *insure the most effective use of water* within the state (O.S.A. 82 §§1085.1 and .2). The Board is authorized to negotiate contracts and compacts with the Federal Government and other states for flood control and water conservation. The Board may also appropriate water for use by special purpose districts in the state. The Board may divide the state into water districts to facilitate administration of the law. Where there is an unauthorized use of water, or transfer of water right, failure to repair water works after notice by the Board, waste of water or other conduct in violation of the law or rules and regulations of the Board, the Board can file both criminal charges against the violator and seek remedial action to enjoin the activity in the proper district court (O.S.A. 82 §105.20). In addition, the legislature granted the Board the authority to make any rules, regulations and orders that it considers necessary to carry out any duties imposed upon it by law (O.S.A. 82 §1085.2).

In 1972, the seven member Board was increased to a nine member Board with one representative from each of the six congressional districts and three members appointed at large. Members of the Water Resources Board also make up the Water Conservation Storage Commission (O.S.A. 82 §1085.18). This Commission reviews proposed projects where water is to be stored and retained. If the commission finds water in excess of future or present needs then the appropriate State or Federal agency is notified by the commission of its conclusions and the project is constructed (O.S.A. 82 §§1085.20 and .21).

If a project has been constructed in conjunction with the Federal Government, the commission may purchase excess project water (i.e., that water not purchased by existing users) (O.S.A. 82 §1085.21). This water can then be sold to municipalities, industry or agricultural users. The Commission assists in the development of water storage and control facilities for the use and benefit of the public and for the distribution and conservation of water (O.S.A. 82 §1085.17), and to aid in distribution of water among users.

11.3.2 Judicial Bodies

Oklahoma does not have special water courts. Suit may be instituted in district court to adjudicate conflicting water rights. Water Resources Board decisions may be appealed to district court (O.S.A. 75 §301).

11.3.3 Water Users and Their Organizational Structure

Individuals--
Water can be appropriated by an individual or any legal entity, i.e.,corporation, company, partnership or agency. The rules of water allocation and use previously discussed apply to any permit holder. Thus, we have provided in the law both rights and duties to which a water user must comply. The nature of vested water rights (those established prior to the enactment of the 1963 water act) and

appropriative rights (created under the current law) provide the holder with a property interest recognized and protected by the State. A right holder may also initiate an action in the appropriate district court to protect his interest from impairment by others (O.S.A. 82 §105.5). Each right has its own peculiarities in source, amount, place of use, and priority.

At the same time, the right holder is obliged to respect the public and other right holder interests by applying the water to beneficial use and only diverting those amounts necessary for the purpose at the time of diversion. Other duties are to prevent waste and comply with provisions of the law and Board rules, orders and regulations on use, transfer and assignment of water rights.

Districts--
There are many special purpose districts in Oklahoma. Those associated with water matters include: irrigation districts, conservancy districts, water and sewer management districts, conservation districts, and regional water distribution districts. These entities are organized under special legislation, are public corporations, and considered subdivisions of the state.

Oklahoma, like many of the other western states, was faced with the problem of stimulating and assisting water development at the local level beyond what capabilities an individual or group of water users could achieve. And like most of the other western states, Oklahoma witnessed the success of the California irrigation district enterprises formed under the Wright Act of 1887, and subsequently adopted similar legislation (O.S.A. 82 §§277.1 to 277.24). The law was amended with the Irrigation District Act of 1973 (Okla. H.B. 1174). Following the initial irrigation district law, the need arose for entities with other purpose capabilities and higher levels of organization, and, consequently, laws authorizing the formation of the other special districts mentioned were enacted.

An irrigation district is an organization that is primarily organized to develop and improve the water resources utilization within a common area through planning, construction operations, and maintenance of the irrigation system facilities. It may be organized to contract with the state or U.S. Bureau of Reclamation, or other federal agencies to carry out its purposes. The 1973 Act sets out the specific requirements and procedures for formation of a district and how it should be operated.

A Board of Directors, elected by the qualified electors of the district, governs the activities of the district. This Board has the power to apply to the Water Resources Board for use of stream or ground water, and otherwise acquire water rights for the district. Most important is their duty to prepare a uniform service agreement providing for the equitable distribution and use of water among the district members (O.S.A. 82 §277.6(3)) and the power to provide for the proper drainage of lands (O.S.A. 82 §277.6(2)). Further, a district may enlarge its powers in order to develop comprehensive plans for the efficient use of fresh ground water and the prevention and control of waste if more than 50% of the landowners desire to do so (O.S.A. 82 277 §277.22(5)).

Among the other districts warranting discussion is the regional water distribution district. A water district organized under the 1972 Act is a nonprofit entity with power to:

1. Acquire rights to water for beneficial uses (O.S.A. 82 §1272).
2. Acquire water storage facilities and store water in reservoirs (O.S.A. 82 §1267).
3. Purify, treat and process such waters (Ibid).
4. Furnish water to persons requesting such service (Ibid).

Plans for any facilities must be approved by the Water Resources Board and State Department of Health.

11.4 Pollution Control

The Water Pollution Control Act is administered by the Water Resources Board. The Board has the authority to advise and consult with local, state and federal agencies; to develop comprehensive programs for the control, prevention and abatement of new or existing pollution; to require plans and specifications to be submitted for industrial disposal facilities; and to accept and administer federal grants and loans (O.S.A. 82 §926.3). Standards of water quality and classifications of streams according to their best present and future uses are also the duties of the Board. A reasonable time is allowed for persons discharging wastes into the waters to comply with the Board's classifications and standards (O.S.A. 82 §926.6). After notice and a hearing, the Board may issue an order to prevent violations of the act or of prior order of the Board. Criminal penalties are provided for by the courts. Any Board order may be appealed in the district court (O.S.A. 82 §926.7 and 926.10).

Planning pollution control programs is the responsibility of the Department of Pollution Control, an independent state agency. This department is administered by the Pollution Control Coordinating Board which is made up of nine members appointed by the Governor (O.S.A. 82 §932). The Pollution Control Coordinating Board coordinates the activities of those state departments having responsibility for environmental matters. It may also require the agencies to take action to correct violations of the water pollution control legislation. To abate pollution, suit may be instituted through the attorney general for injunctions, criminal sanctions are provided for in the statutes and private suits to abate pollution or suppress nuisances are provided for (O.S.A. 82 §937). Enforcement of pollution control programs lies mainly with individual state departments. The Pollution Control Coordinating Board may, however, act on its own to prevent or abate pollution if a majority of Board members feel that the state agency having jurisdiction has neglected to take the appropriate action (O.S.A. 82 §934).

REFERENCES

Geraghty, J., D. Miller, F. VanderLeeden, F. Troise, Water Atlas of the United States, Water Information Center, Port Washington, N.Y., 1973.

APPENDIX A REPORT 12

OREGON

12.1 HISTORICAL BACKGROUND

Oregon is a state of 96,981 square miles of which there are 1.9 million acres of irrigated agriculture. The state receives an average of 27 inches annual precipitation. An average of 4,800 million gallons per day is withdrawn from surface and ground waters for irrigation purposes (Geraghty, 1973).

The evolution of water law in Oregon is characterized by a mixture of riparian rights and appropriation rights.[1] The state initially adopted the riparian doctrine (Taylor v. Welch, 6 Ore. 198, 1876). This doctrine holds that a riparian landowner (a landowner whose land abuts a stream) has the right to the flow of the stream without an unreasonable detention of the water or diminution of its flow. Even during that period when riparian rights were being recognized in Oregon, the Oregon Supreme Court had reservations about the doctrine (Hough v. Porter, 51 Ore. 318, 95 P. 732, 1908, 98 P. 1083, 1909, 102 P. 728, 1909). This doubt centered around the idea that beneficial use should be the test of a water right and not land possession. It was argued that unless a riparian owner used and benefited substantially from the water, such an owner should not be allowed to prevent the use of water by others claiming it under an appropriation doctrine (Ibid. See also Norwood v. Eastern Oregon Land Co., 112 Ore. 106, 227 P. 1111, 1924). In addition, the Oregon Supreme Court took the position that any land patented from the Federal Government after the Desert Land Act of 1877 carried with it water rights (Hough v. Porter, 51 Ore. 318, 95 P. 732, 1908; see also Lewis v. McClure, 8 Ore. 273, 1880). This recognition was critical in Oregon since virtually all land titles in the State emanate from the Federal Government (Clark, 1974, p. 93).

The Oregon Legislature in 1909, after further judicial erosion of the riparian doctrine, rejected the doctrine and enacted legislation which implemented the appropriation doctrine as the exclusive method of acquiring water rights in the state (O.R.S. § 537.010 to 537.990). A permit system was introduced to administer water rights which replaced the pre-1909 methods of posting and recording notice of intent to appropriate with the County Clerk. While recognizing the appropriation doctrine as the exclusive method of acquiring rights, the statute provided for the protection of existing rights vested under the riparian doctrine. The Water Code of 1909 did restrict the vested riparian right to the quantity of water which was being beneficially used at the time the legislation was passed, or which was placed to use within a reasonable time thereafter (O.R.S. § 539.010). The need for the appropriation doctrine was fairly clear since riparian ownership establishes no priority. As was noted by one notable case, there is no such thing as prior riparian ownership insofar as the distribution of water for irrigation between riparian owners is concerned (Hough v. Porter, 51 Ore. 318, 95 P. 732, 1908). An area depending on irrigation could not allow all owners to demand water because in all probability the water supply could not meet all such demands. It was clear that the riparian doctrine was an unworkable solution to the water allocation problem in Oregon, and the appropriation thus is the most significant legal system for allocating waters from surface and ground waters.

Oregon adopted its first ground water law in 1927 (Ore. Laws 1927, c. 410) after judicial interpretations taking the state from the absolute ownership doctrine (Taylor v. Welch, 6 Ore. 198, 1876) to a possible modified version of the reasonable use doctrine.[2] The basin ground water provisions of 1927 were subsequently replaced by a comprehensive Ground Water Act in 1955. This Act reflected the state's recognition that previous laws prevented the orderly development and control of ground waters in light of population growth and water demands.

A significant reorganization took place in 1975 which may cause considerable confusion keeping straight the various administrative bodies concerned with water in Oregon. Prior to July 2, 1975, Oregon's organizational structure consisted of a State Engineer and Water Resources Board. The former contained the staff to carry out the policies and directives of the Board. Under HB 3180, signed 2 July 1975 by the Governor of Oregon, the State Water Resources Board and Director of the Board were abolished and a new body was created entitled the Water Policy Review Board. The office of State Engineer was likewise abolished and those powers vested in the Water Resources Director. The Department of Water Resources was established, which consists of the Water Policy Review Board and the Water Resources Director and his staff. The details of the organization are in section 12.3.1.

12.2 SUBSTANTIVE LAW

12.2.1 Property Right in Water

In Oregon all the waters of the state from any source have been declared to belong to the public (O.R.S. § 537.110). Water flowing in a natural stream is not subject to private ownership. Any private rights which do attach are strictly usufructuary rights to take the water from the stream and apply it to a beneficial use (In re Hood River, 114 Ore. 112, 227 P. 1065, 1924). The right to water does not attach to the corpus of the water as long as it remains in the stream in its natural state (Nevada Ditch Co. v. Bennett, 30 Ore. 59, 45 P. 472, 1896).

To obtain a usufructuary interest the claimant must actually divert whatever quantity of water is required for his proposed use (Nevada Ditch Co. v. Bennett, loc. cit.).

In Barker v. Sonner (135 Ore. 75, 294 P. 1053, 1931) the Oregon Supreme Court held that water becomes personal property when it has been appropriated and taken into possession by confinement in ditches or other artificial works (Coast Laundry Inc. v. Lincoln City, 9 Ore. App. 521, 497 P. 2d 1224, 1972). The right which an appropriator gains is a private property right subject to ownership and disposition (In re Schollmeyer, 69 Ore. 210, 138 P. 211, 1914).

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[1] See discussion in A Summary-Digest of State Water Laws, a Study for the National Water Commission, Richard L. Dewsnup and Dallin W. Jensen, editors, 1971, Chapter 37, pp. 619-635.

[2] See Rights to Underground Water in Oregon: Past, Present and Future, Willamette Law Journal 317 at 324, 1965.

An appropriator is entitled to a continuing right to the use of such waters that have been appropriated, but not beyond that reasonably required and actually used (Claypool v. O'Neil, 65 Ore. 511, 133 P. 349, 1913). Thus his right is one to use the resources, not a right in the corpus of the water. The right acquired consists of six factors which define its position relative to other rights and the specific properties of the right. These factors are: (1) priority date or right, (2) quantity that can be divided under the right, (3) place where the water can be applied, since water rights are appurtenant to land in Oregon, (4) the season(s) or period of use, (5) type of use to which the water can be put, and (6) the location of the point of diversion (Tudor v. Jaca, 178 Ore. 126, 164 P. 2d 680, 1945).[3]

12.2.2 Acquisition of Right

Anyone desiring a water right must make application to the Water Resources Director for a permit. This application must be made and the permit issued before the applicant may begin to construct works.[4] The application must be approved if there is unappropriated water available and the application is for beneficial use. The applicant must proceed with reasonable diligence to construct the project and place the water to beneficial use once the application has been approved. Construction must begin within one year, and the project must be completed within five years (O.R.S. § 537.230).[5] The one-year time limit within which to begin the project appears to be very strict in Oregon. One decision has held that failure to begin within one year is fatal to the permit even where the applicant showed diligence in proceeding with the project after one had elapsed (Morse v. Gold Beach Water, Light and Power Co., 160 Ore. 301, 84 P. 2d 113, 1938). The Director may allow an extension of time to complete the project if good cause is shown.

Each application for a permit to appropriate water must have the name and address of the applicant, the source of the water supply, the nature and amount of the proposed use, the location and description of the proposed diversion and carrying works, and the time within which the necessary diversion works will be constructed and the water applied to the proposed use (O.R.S. § 537.140). All applications are to be accompanied by maps, drawing, data concerning the proposed project, and evidence of the applicant's ability to construct the project as the Director prescribes. The priority of the right dates from the time the application was filed. For pre-1909 water rights, the priority date usually related back to the first step taken to appropriate the water (In re Rights to Use of Waters of Silvies River, 115 Ore. 27, 237 P. 322, 1925) or date posting notice.

If the permit is for agricultural purposes, the applicant must give a legal description of the land to be benefited and the number of acres that will be irrigated (O.R.S. § 537.140).

If, after consideration of the application, the Director feels that proposed use is prejudicial to the public interest, or if the proposed use is for hydroelectric power in excess of 100 theoretical horsepower, then the application must be referred to the Water Policy Review Board for consideration (O. R. S. § 537.170 as amended by H.B. 3180, 1975). This Board, after proper notice and hearing, is to determine whether the proposed use would be detrimental to the public interest and issue an order accordingly.

Once the project is completed to the satisfaction of the Director of the Water Resources Department, the applicant is issued a certificate evidencing the perfected right (O.R.S. § 537.250 and 537.270). The certificate which is granted upon completion is conclusive evidence of the priority and the extent of the appropriation (O.R.S. § 537.270). Oregon statutes likewise provide for application for a preliminary permit on a proposed water project (O.R.S. § 543.220, as amended by H.B. 3180, 1975).

Ground Water--

Ground water in Oregon is governed by the Ground Water Use Act of 1955. This act had the same effect on ground water that the Water Rights Act of 1909 had on surface water. It recodified all statutes and decisions dealing with water beneath the land (O.R.S. § 537.515). Individuals who were using ground water or to the passage of the act had their rights recognized to the extent of the maximum beneficial use any time within two years prior to the effective date of the act (O.R.S. §537.585). Users who wished to be protected were required to register their claims with the Director and obtain a certificate evidencing a right but not a perfected right. Failure to register within three years after the act created a presumption that the claim had been abandoned (O.R.S. §537.605).

The right to use ground water is limited by the same constraints as the right to use surface water. An application for a permit for such use has to be filed with the Director (O.R.S. § 537.535 and 537.615). Exceptions to the general rule are for using ground water for stock watering, watering lawns, domestic purposes where the use does not exceed fifteen thousand gallons a day, and for industrial use that does not exceed five thousand gallons a day (O.R.S. § 537.545).

The Director will approve the application if it can be determined that there is unappropriated water available which can be placed in beneficial use without impairment of prior rights (O.R.S. §537.620). The Director has the authority to approve an application subject to any conditions which may be imposed to prevent an impairment of a prior right, to prevent a wasteful use of water, or to protect the public welfare. Unlike surface rights, there is no provision in the Ground Water Use Act to refer applications to the Water Policy Review Board for determination.

The Director is directed to identify and define the location, extent and characteristics of each ground water reservoir in the state in order to conserve such resources. Before the boundary or depth of any ground water reservoir is drawn, he is to make a final determination of the right to appropriate that ground water (O.R.S. § 537.665). The ground water registration certificate the well owner gets is not a final determination of the right (as with the surface rights) because the right is subject to statutory determination proceeding in which the boundaries of the water reservoir are determined (O.R.S. §537.610).

A determination of the reservoir may be called for by petition of the users of the reservoir or on the motion of the Director. When the determination is begun, each user is required to file a statement of ground water claims (O.R.S. §537.670). In addition to defining the extent of individual rights in the reservoir, the order of the Director defines the nature of these rights, the boundary of the reservoir, the lowest permissible water level in the ground water reservoir, serviceable methods for withdrawing water, and the rules for controlling the use of the ground water (O.R.S. §537.685). Once the determination is complete and no appeal has been taken to the District courts, the Director issues each ground water user a certificate evidencing a ground water right (O.R.S. §537.700). This certificate is the final determination of the user's water right.

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[3] See Clark, 1974, pages 137-145, for a detailed discussion of these factors.

[4] The statutory method is exclusive despite some curious language in one decision to the effect that it was "debatable" whether a right could be obtained by any other method than the statutory method of appropriation. See Tudor v. Jaca, 178 Ore. 126, 164 P. 2d 680, 1945.

[5] Permit actually issued for completion within three years but extensions beyond five years possible.

The Director may designate an area as a "critical ground water area" where water has become polluted or scarce. This may be done on petition of the water users or on a motion of the Director. The grounds which are used to determine critical areas are:

1. That the water level is declining excessively, which is understood to mean that the water level is declining faster than it is being recharged.
2. That substantial interference is beginning to develop between users.
3. That the ground water supply in the area is being overdrawn.
4. That the water quality is deteriorating (O.R.S. §537.730).

The Director may also designate an area a ground water area if there is no unappropriated water in the ground water reservoir (O.R.S. §537.620). If he defines the ground water basin as a critical area, one of the following may be taken: 1) the area may be closed to further appropriation; 2) his order may include a determination of the permissible total withdrawal and an apportionment of such amounts; 3) a system of preferences without regard to priority of rights may be provided; 4) the withdrawal of ground water by individual users may be reduced; 5) the abatement of pollution may be required; or 6) a system requiring the rotation of the use of ground water among users may be implemented (O.R.S. §537.735).

Prescriptive Water Rights--
Ordinarily, a lower riparian owner cannot gain a prescriptive right against an upper riparian owner (Day v. Hill, 241, Ore. 507, 406 P.2d 148, 1965). However, water rights may be acquired in Oregon by adverse possession if such use is open, notorious, adverse, and continuous throughout the prescriptive period (Norwood v. Eastern Oregon Land Co., 122 Ore. 106, 227 P.1111, 1924, and Wimer v. Simmons, 27 Ore. 1, 39 P.6, 1895). The statutory period for acquisition of rights by adverse use is ten years (O.R.S. §12.050).

Preferences--
The status of preference to the use of water in Oregon is more complex than most other states due to the partial retention of an earlier statute. In 1893, the law placed domestic as highest preference with agriculture following ahead of manufacturing purposes (Ore. Laws, 1893, p. 150, O.R.S. §540.140). Then, in 1955 a section was added which gave the Water Resources Board (now the Water Policy Review Board--H.B. 3180, July 1975) the authority to allocate water between users with the same priority date and distribute water during times of scarcity with preferences first to human consumption, second to livestock consumption, then to other beneficial uses according to the public interest under the existing circumstances (O.R.S. §536.310, 12). The Board has authority under §536.340(3) to adapt preferences for future uses of water, taking into consideration the natural characteristics and economy of the area, water requirements, proposed uses, and other important factors.[6]

12.2.3 Adjudicating Water Rights

Riparian rights were recognized for some time in Oregon prior to the enactment of the permit system. Because of this, it was necessary to have a method by which vested riparian rights could be adjudicated to determine quantitatively what water, subject to appropriation, was left. Legislation passed in Oregon limits the riparian rights to water placed to beneficial use prior to the adoption of the 1909 statute or within a reasonable time thereafter (O.R.S. §539.010).

The statutory procedure is initiated on a petition of the water users of a stream. It may also be initiated in circuit court by convention of a private law suit into a general adjudication proceeding (O.R.S. §539.020). After the action has commenced, the Water Resources Director must serve notice on all known claimants. Published notice must be made of the proceedings. Water users are required to file detailed statements describing their claim to the use of the water (O.R.S. §539.050). After all pleadings have been submitted, the Director receives testimony concerning past use of water (O.R.S. §539.040). He is also required to prepare a hydrographic survey of the various uses of the water from the source being adjudicated (O.R.S. §539.120).

After receipt of all evidence, the Director issues an order determining and establishing the rights of the users along with the finding of fact upon which the order is based. This administrative order is then filed in a circuit court, where interested persons may file objections or exceptions to the order. The court adjudicates the water rights and upon the final determination, the Water Resources Director issues certificates of water rights (O.R.S. §539.150). This process is one of three general patterns followed in the West and is commonly referred to as the Oregon system. Eight other states follow this procedure. The second system is the Wyoming system, in which the administrative agency adjudicates the rights, but an aggrieved person may appeal to the court. The third system is the Bien Code procedure, under which the administrative agency prepares a hydrographic survey and forwards it to the state Attorney General, who brings the action in the appropriate court for resolution of rights.[7] Colorado applies a period tabulation cum adjudication process (148-21-18 to 22).

The rights protected by the 1909 statute were vested riparian rights to the quantity of water being beneficially used at the time the act was passed. The reason given by the Oregon Supreme Court for permitting the change in the method of attaining water rights was that it was difficult to rationalize allowing a riparian proprietor to claim an undiminished flow of a stream without the actual use thereof (In re Willow Creek, 74 Ore. 592, 144 P.505, 1914). This was the effect of the riparian doctrine in its purest form. All riparian landowners were, historically, permitted to demand their full quantity of water at any time. They were also permitted to demand that the river remain undiminished in quantity and quality.

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[6] Actually, preferences are only administered as between water users of the same priority.

[7] For a discussion of the adjudicatory procedures, see Stone, Albert W., "Montana Water Rights--A New Opportunity," 34 Montana Law Review, Winter, 1973, pp. 69-72.

12.2.4 Conditions of Use

Beneficial Use--
Beneficial use is a basis, measure and limit to all rights to use water (O.R.S. §540.610, In re Deschutes River, 148 Ore. 389, 36 P.585, 1934). An appropriator is entitled to beneficial use requirements as stated in the appropriator's permit. The appropriator is not entitled to waste water. Applications may be approved, subject to such terms, conditions and limitations necessary to protect the public interest (O.R.S. §537.190). In no event may an application be approved for more water than can be applied to beneficial use.

There have been several judicial decisions based on the aforementioned statutory provisions, regarding the amount of water to which a priority attaches. Two decisions held that the priority of right to water extends only to that amount needed for the use for which the water has been appropriated (In re Umatilla River, 88 Ore. 376, 168 P. 922, 1918, Broughton v. Stricklin, 146 Ore. 259, 28 P. 2d 219, 1934). These decisions were followed by a decision holding that a prior appropriator cannot claim or use more water than is reasonably necessary for the purpose of the appropriation (Tudor v. Jaca, 178 Ore. 126, 164 P. 2d 680, 1945). Still later the Oregon Supreme Court held that an appropriator of water cannot divert more water than is actually put to use, reasonable transmission losses excepted. One decision seems significant in that the Oregon Supreme Court has held that all waste of water should be suppressed by the court adjudicating water rights (In re Deschutes River, 148 Ore. 389, 36 P. 585, 1934). In an adjudication procedure between users on stream, proof of actual use is essential in determining the amount of water to be allocated each user. Any excess water is to revert to the state.

The role of the beneficial use concept in granting water rights is clear. All appropriative rights in Oregon are initiated by submitting an application for a permit to the Water Resources Director. The Director is required by statute to approve all applications made in the proper form unless the proposed use would conflict with existing rights. These applications are based on the application of water to a beneficial use. If the Director feels that the use proposed may adversely affect the public interest, he must refer this application to the Water Policy Review Board for consideration (O.R.S. § 537.160). What constitutes the public interest is unclear. However, the Board is charged with determining whether the proposed use would be detrimental to the public interest. Their decisions are to be based on the following criteria:

a) Conserving the highest use of the water for all purposes, including irrigation, domestic use, municipal water supply, public development, public recreation, protection of commercial and game fishing and wildlife, fire protection, mining, industrial purposes, navigation, scenic attraction or any other beneficial use to which the water may be applied, for which it may have a special value to the public.

b) The maximum economic development of the waters involved.

c) The control of the waters of this state for all beneficial purposes, including drainage, sanitation and flood control.

d) The amount of waters available for appropriation for beneficial use.

e) The prevention of wasteful, uneconomic, impracticable or unreasonable use of the waters involved.

f) All vested and incohate rights to the waters of this state or to the use thereof, and the means necessary to protect such rights.

g) The state water resources policy formulated under O.R.S. § 536.300 to 536.350 and 537.505 to 537.525 (O.R.S. § 537.170 as amended by H.B. 3180, 1975).

There is a wide range of beneficial uses prescribed by statute in Oregon (O.R.S. §536.310). The Board is required to consider all of them as part of the legislative declaration, including the maintenance of minimum flows (O.R.S. § 536.610, 7). The Water Resources Department is charged with enforcing the laws concerning conservation, release and discharge of excessive unused claims to waters of the state so that such waters may be available for appropriation (O.R.S. § 536.300). No cases have dealt with the definition of the words "excessive" and "unused" in the statute. If the local use test is applied, an application of water which may in fact be excessive may not be excessive under the statute. However, if the test is the water requirements for a particular crop, the type of land in use, or the season of the year, then the words "excessive" and "unused" may take on a new meaning.

The Elements of Economics and Reasonable Use--
Oregon's water policy is to ensure an economical development of water and to prevent the uneconomical or unreasonable use of water (O.R.S. § 537.170 as amended by H.B. 3180, 1975). Whether we limit the definition of use by applying the terms beneficial, reasonable, or economical, the goal is to limit the waste of water. However, the Oregon Supreme Court recognized that the user should be required to make an economic as well as reasonable use of the water (Dalton v. Kelsey, 58 Ore. 244, 114 P. 464, 1911).

Waste--
The waste of water can be considered as the opposite of using the water beneficially. In In re Hood River (227 P. 1065, 114 Ore. 112, 1924), the court held that waste of waters is prohibited and when the water is not used then the water must be shut off from the ditches or laterals. Extravagant and wasteful application of water is not within the definition of use (In re Water Rights of Deschutes River and Tributaries, 286 P. 563, 134 Ore. 623, 1930). An appropriator must exercise reasonable care to prevent waste and ensure that an economical use be made of water used for irrigation purposes (Broughton v. Stricklin, 146 Ore. 259, 28 P. 2d 219, 1934).

12.2.5 Manner in Which Water Rights May Be Adversely Affected

Water rights may be lost in whole or in part in Oregon by one or more of six ways. They are: abandonment, forfeiture, adverse possession, estoppel, condemnation, and enforcement of beneficial or non-waste provisions of the statutes.[8]

Abandonment--
Abandonment refers to the non-use of water by an appropriator and the intent not to exercise his right (Hough v. Porter, 51 Ore. 318, 95 P. 732, 1908). This intent need not be explicit, but rather can be inferred from the conduct of the right holder (Jones v. Warm-Springs Irrigation District, 162 Ore. 186, 91 P. 2d 542, 1939).

Oregon has also provided a statutory procedure for voluntary abandonment of water rights. This provision enables one with a prefected and developed water right to certify under oath to the Water Resources Director that he has abandoned the right and wants it canceled (O.R.S. § 540.621). The Director is then to cancel the right and the water under the canceled appropriation reverts to the public and is subject to meeting other rights or new appropriations.

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[8] Clark, 1974, p. 152 lists and defines four ways in which water rights may be terminated.

Another way is for the Director, either on a self-initiated motion or on evidence submitted by third parties, to initiate proceedings to have a water right declared abandoned. In this case notice is sent to the owner of the lands to which the water is appurtenant and to the occupant of such land. These individuals have sixty days within which to protest the proposed cancellation (O.R.S. § 540.631). If no protest is filed, the Director enters an order cancelling the right. If a protest is filed, a hearing is held and after such hearing the Director enters an order either cancelling the whole right, cancelling in part or modifying the right or declaring that it is not cancelled or modified. This order is subject to appeal.

Forfeiture--

Although the terminology varies from state to state in the West, and quite often "abandonment" and "forfeiture" are used interchangeably, it is commonly understood that in the legal senses forfeiture refers to the "statutory" method by which water rights may be terminated after non-use for a specific time period. Oregon law provides that non-use for five successive years is conclusive presumption of abandonment (O.R.S. § 540.610).[9] The water appropriated under the right reverts to the public, and is subject to existing rights or appropriation. Intent to abandon or forfeit the right is not at issue.

Adverse Possession--

Water rights may be lost by adverse possession where the use is open, notorious, adverse, hostile and continuous for a period of ten years (Wimer v. Simmons, 27 Ore. 1, 39 P. 6, 1895; O.R.S. § 12.050). The person claiming adverse use has the burden of showing the use was detrimental to the record owner (Ison v. Sturgill, 57 Ore. 109, 110 P. 535, 1910).

This may appear cut and dried. However, Clark raises a very valid and logical point as to whether a water right in Oregon can be acquired by adverse possession after 1909 in light of the statutory provision that water can be appropriated for beneficial use as provided in the 1909 water code and not otherwise (O.R.S. § 537.120). This provision, in conjunction with the five-year nonuse conclusive presumption of statutory forfeiture and reversions to public of such waters, implies that before one could acquire rights by adverse possession after ten years, the water would become public water after five years and only appropriable under the permit system provided for by law (Clark, 1974, pp. 155-156).[10]

Estoppel--

Estoppel is a legal doctrine in which a person who leads another to believe a certain thing is true, is prevented from asserting claims to the benefits of the other's efforts who proceeded in reliance upon the former's action. It is probably a rare occurrence in water law that the doctrine of estoppel is maintained. However, in McPhee v. Kelsey (44 Ore. 193, 74 P. 401, 1903), the court held where a water right holder induced another to spend money and labor enlarging a ditch and conducting water onto his land, the former is estopped from retracting a water right implicitly given the latter (Clark, 1974, p. 152).

Condemnation--

Water rights may be condemned through the exercise of the preference system in Oregon. However, if a higher preferred use does acquire a lower preferred use's water or is allocated, the latter's water, by the Water Resources Director, compensation must be assessed and tendered (In re Schollmeyer, 69 Ore. 210, 138 P. 211, 1914).

Enforcement of Beneficial Use or Waste Concepts--

An appropriator is limited to that quantity specified in his permit and which is being beneficially used. Any unused water is subject to forfeiture. Based on the cases discussed in section 12.2.4, supra, and the authority of the Water Resources Director to deliver only water that can be beneficially used, an action can be brought by the Director against one who consistently diverts excess waters to reduce the right to divert. This was the court's finding in Oliver v. Skinner and Lodge (190 Ore. 423, 226 P. 2d 816, 1953) and In re Willow Creek (74 Ore. 592, 144 P. 505, 1914) in which a water right was reduced due to an inefficient diversion.

12.2.6 Legal Incentives and Disincentives for More Efficient Water Use Practices

Irrigation Return Flow--

A downstream senior appropriator is entitled to have the stream flow in a sufficient quantity to satisfy his appropriation, and conversely, an upstream junior appropriator cannot use water if that use would deprive the downstream senior of his appropriated quantity. Return flows are those waters which return to a natural stream after use, and which may become subject to vested rights of downstream users.

However, an appropriator can capture and reuse waste and seepage waters if still within his control (Cleaver v. Judd, 238 Ore. 266, 393 P. 2d 193, 1964). The case went on to hold, also, if waste and seepage water is recaptured for reuse within the boundaries of an irrigation district then downstream previous users of such waters have no right to complain.

Oregon statutes, while not comprehensive concerning waste water, provide that the person upon whose land seepage or spring waters arise has the first right to use those waters (O.R.S. § 537.800). The statute further states that all ditches now or hereafter constructed for the purpose of utilizing waste, spring, or seepage waters, shall be governed by the same laws relating to priority of right as those ditches constructed for the purpose of utilizing the water of running streams. A provision for construction of ditches for waste water being under the same rules as other priorities indicate that one may establish an appropriation of water that is being wasted, but that the appropriation will take a later priority date.

Oregon has not confronted the situation of one user, who has been making less than the totally efficient use of water, stops using water in such a way and makes a more efficient use of it, thereby eliminating waste or return water.

There is one limitation and consequently a disincentive to making a more efficient use of water in delivery and application. Water rights in Oregon are appurtenant to specific lands and only those lands described in the permit can be irrigated thereunder. Thus, if water is saved in delivery through improvement of the conveyance system or saved by improving the application system, this water cannot be applied to other lands (Williams v. Altnow, 51 Ore. 275, 95 P.

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[9] See also Withers v. Reed, 194 Ore. 541, 243 P.2d 283, 1952 and Day v. Hill, 241 Ore. 567, 406 P.2d 148, 1965.

[10] This issue was argued in Tudor v. Jaca, 178 Ore. 126, 164 P.2d 680, 1915, but not clearly settled.

200, 97 P. 539, 1908). This would be considered a material extension of the original right, enlarging it to the injury of other right holders. As was seen in the preceding section, however, a water right may be reduced where an inefficient diversion and delivery system is maintained.

Salvaged and Developed Waters--
The Oregon Supreme Court implied in Jones v. Warmsprings Irr. Dist. (162 Ore. 186, 91 P. 2d 542, 1939) that if the user could show that new waters were developed, he would have the right to use such waters.

Provisions for Transfer of Water Rights and Diversions--
Since 1909, water rights are appurtenant to land irrigated except that if at any time it "should become impracticable to beneficially or economically use water for the irrigation of any land to which water is appurtenant, said rights may be severed from said land, and simultaneously transferred, and become appurtenant to other land" (Ore. Laws 1909, c. 216 §65), and the transfer will not be detrimental to existing rights. The Oregon Supreme Court later reaffirmed the statutory provision in holding that "permits for both ground and surface water may be transferred separately from the land to which they are appurtenant" (Haney v. Neace-Stark Co., 109 Ore. 93, 216 P. 759, 1923). Before the water right may be changed, however, the change must comply with the provisions of the water code. When the owner has complied, he may change the place of use, point of diversion or nature of his use without losing the priority of right (O.R.S. § 540.510).

Compliance consists of making application to the Water Resources Director for a change. This application must state the name of the owner, the nature of the right, and the nature and extent of the prior use, a description of the use proposed and the reasons for proposing the change (O.R.S. § 540.520). Opportunity for those who wish to object along with a public hearing is provided. If the Water Resources Director finds that the proposed change can be made without injury to existing rights, an order approving the change and fixing a time limit within which the change must be accomplished is issued (Vandehey v. Wheeler, 507 P. 2d 831, 1973).

Permits for both ground and surface water may be assigned. A person who has not perfected a right but has a permit to begin construction may assign it (O.R. S. § 537.220). Unless the permit assignment is recorded in the Director's office it is not binding upon anyone but the assignor and assignee. Without notice of assignment, the Director is not bound by the assignment and construction requirements remain in effect. There may be problems of abandoning the right if such notice of assignment is not given.

12.2.7 Waste Water Disposal and Drainage

This section concerns the right of upper landowners to discharge natural flows and waste or artificial waters upon the lands of lower landowners and the corresponding rights of the latter to protect their properties.

Regarding the law of drainage for natural diffused surface waters, Oregon applied a modified civil law rule (Clark, 1974, p. 17). This rule in its pure form states that an upper landowner has a dominant servitude to discharge diffused surface waters onto the lands of lower landowners which flow in their natural course upon these lower lands. This rule was adopted by Oregon in 1919 in a modified form to allow an upper landowner to accelerate the flow of water onto the lower landowner's property by enlarging the ditch that collected the diffused water and discharged it through the natural drainages (Rehfuss v. Weeks, 93 Ore. 25, 125 P. 137, 1919). The court stated the upper landowner could expel waters in the direction they would naturally flow without liability and even construct artificial means to precipitate the movement of water more rapidly, provided he causes waters to flow in the natural drainage that naturally flows there and provided he acts with "prudent regard" for the interests of others (Ibid., p. 32). The law was added to in 1958 to provide that the flow could be accelerated by artificial means (in this case tile drains) as required by good husbandry, without liability to the lower landowner, so long as the water was not diverted from its natural channels (Garbarino v. Van Cleave, 214 Ore. 554, 330 P. 2d 28, 1958).

The same rule does not apply for introduction into a natural drainage of pollution (Adams v. Clover Hill Farms, 86 Ore. 140, 167 P. 1015, 1917),or waters that would not naturally flow in the drainage area (Street v. Ringsmeyer, 108 Ore. 349, 216 P. 1017, 1923). The former case pertained to feedlot runoff with the diffused surface waters flowing onto the lands of the plaintiff. The latter case involved the introduction of artificially introduced waters from a manmade project.

Nor does the modified unit rule of drainage pertain to man-increased flows in a watercourse (Levene v. Salem, 191 Ore. 182, 229 P. 2d 255, 1951), or return flows from a diversion of water out of a watercourse (Stephens v. City of Eugene, 90 Ore. 167, 175 P. 855, 1918).

12.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

12.3.1 State Water Agencies

As was briefly discussed in the section of this report on the historical background to Oregon water law conditions, the State introduced a major reorganization of the water agencies in mid-1975. In the preamble of House Bill 3180, the 1975 regular session of the Oregon Legislative Assembly stated:

> that the functions of the State Engineer and the State Water Resources Board can best be performed by a single Water Resources Department under the supervision of a Water Policy Review Board and the management of a director.

The legislation continues by providing that the State Water Resources Board is abolished and the tenure of Board members, Director of the Board, and staff shall cease and the duties, functions and powers of the Board are transferred and vested in the Water Policy Review Board (H.B. 3180, 1975, §1). The office of State Engineer transferred to the Water Resources Director (Ibid., § 2). In all Oregon statutes referring to the previous offices, the terms for the new organizational structures can be substituted (Ibid., § 3). The Board and Water Resources Director shall make up the Water Resources Department (Ibid., §14).

The Water Resources Director, the official charged with the administrative responsibility relating to the distribution and control of water rights within the State, is appointed by the Governor for a 4-year term, subject to confirmation by the Senate (Ibid., § 18). Either the Director or his deputy or principal assistant must be a hydraulic engineer. This change in policy away from the rigid requirements found in many Western states that the chief water official be an engineer typifies the trend in some states to inject the political realities of water management into the administrative process.

The Director is also the chief administrative officer of the Water Resources Department and is responsible to the Water Policy Review Board for administration of the duties, functions and powers of the Board and those duties, functions and powers delegated to the Director (*Ibid.*). The Director is to divide the state into water districts to facilitate proper distribution of the state waters. These districts are to be constituted "so as to secure the best protection to the claimants to waters and the most economical supervision on the part of the state"(O.R.S. § 540.010).

These water districts are supervised by watermasters who are both appointed by and subject to the general supervision and control of the Director (O.R.S. § 540.020). The duties of the watermasters include division and regulation of water to water users. The watermasters have authority to shut and fasten controlling works on ditches, pumps or pipelines. Whenever users of water cannot agree on the distribution of such water, they may request the watermaster to divide the water between them (O.R.S. § 540.040).

The Water Resources Policy Board is composed of seven members appointed by the governor and confirmed by the senate (H.B. 3180, 1975, § 15). One member of the Board is appointed Chairman by the Governor and another elected Vice-chairman by the members of the Board.

The Board is charged with developing a program to carry out the legislative policy, as set forth by statute to provide coordinated and integrated multipurpose water resource policy designed to secure the maximum beneficial use of water (O.R.S. § 536.300 and 536.220). The Board is also to diligently enforce laws concerning cancellation, lease or discharge of excessive or unused claims to waters.[11] Those policies adopted by the Water Policy Review Board are binding on every state agency and public corporation (O.R.S. § 536.350 and 536.400). This means that no action is to conflict with the Board's policies without prior approval of the Board having been established. Among the specific powers held by the Board is the power to withdraw unappropriated water from the appropriation when it is necessary to insure compliance with the state policy or when it is in the state interest to conserve the waters of the state (O.R.S. § 536.410).

12.3.2 Judicial Bodies

Oregon does not have special water courts.

12.3.3 Water Users and Their Organizational Structure

Individual Companies--
The preceding sections have outlined the process for obtaining rights to water in Oregon, conditions for exercising the rights and the administrative structure responsible for allocation and distribution of the water and enforcement of the laws on water. As discussed, individuals in their private capacity or organized as irrigation companies can acquire water rights and have the right to use the water according to its availability and under the terms of the permit. Corporations for the irrigation or drainage of land are authorized under Oregon statutes 554.010 to .600.

> Any number of landowners, not less than three, may incorporate themselves for the purpose of draining their land or furnishing same with water for domestic use or protecting same by flood control or for any and all of such purposes in the manner provided in O.R.S. § 554.020 to 554.340 (O.R.S. § 554.010).

The Board of Directors of such a corporation are set forth in O.R.S. § 554.110, which states that,

> The board of directors shall have full power and authority to:
> (1) Build, construct and complete any works and improvements needed to carry out the plan of improvement of the lands described in the articles of incorporation.
> (2) In the names of the corporation, make all necessary water filings and appropriations of water for every purpose of the articles of incorporation.
> (3) Operate and maintain such works as are necessary, convenient or beneficial for said purposes.
> (4) Hire men and teams and purchase machinery, equipment and supplies.
> (5) Generally contract with reference to any of said matters as the board may determine for the purposes and within the scope of the powers granted in O.R.S. § 554.010 to 554.340 for improving the land.

Associated with the right to use the water, however, is the corresponding duty not to commit waste or damage another's property. In *Jones v. Warmsprings Irrigation District* (91 P. 2d 542) the court held that an appropriator acquires a right to use his appropriation for a particular purpose and when this appropriation is not needed the next person in priority of title is entitled to it. In addition, an Oregon court held in late 1975 that a landowner is responsible for his water right, and where the right holder failed to inform a real estate broker that a part of the right had not been used for five years, thus reduced under the Oregon forfeiture statute, he was liable for fraud and the purchaser was entitled to damages (*Bausch v. Meyers*, Ore. App., 541 P. 2d 817, 1975).

Districts--
Districts are corporations with a public purpose; and while subdivisions of the state they differ from counties in that they function for profit and are organized for business purposes, not for a governmental purpose. Irrigation districts are organized under Oregon statutes 545.002 to .628.

Whenever 50 or a majority of owners of irrigated land desire to construct irrigation works they may propose the organization of an irrigation district by signing a petition and presenting it to the county court in which the land is situated (O.R.S. § 545.004).

Powers and duties of the board of directors of irrigation districts include the power to manage and conduct the business affairs of the district, make and execute contracts, and establish rules and regulations (O.R.S. §544.064). Any water acquired by the district must be distributed and apportioned in accordance with the provisions of the Irrigation District Act (O.R.S. § 544.064, 47). Section 545.088 states that:

> The use of all water required for the irrigation of the lands of any district formed under the provisions of the Irrigation District Act, together with all water rights and rights to appropriate water, rights of way for canals and ditches, sites for reservoirs, and all other property required in fully carrying out the provisions of the Irrigation District Act, is declared to be a public use more necessary and more beneficial than any other use, either public or private, to which the water, lands or other property have been or may be appropriated within the district.

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[11] This has not been done however because no authority has been provided in the statutes to implement this policy.

The board can fix rates of tolls and charges, for irrigation and other public uses, for the purposes of defraying expenses (O.R.S. § 545.108).

In *Smith v. Enterprise Irrigation District* (85 P. 2d 1021, 160 Ore. 372, 1939) the court held that an irrigation district acts as a trustee for the constituent landowners who occupy the position of a "cestius que trustent."

Where the United States became a common carrier of water it thereby incurred the duty to use reasonable care in effecting delivery to landowners (*Ure v. United States*, 93 F. Supp. 779). Furthermore if the United States failed to deliver contracted water the landowners could sue under the Tort Claims Act (*Ibid.*).

Water Improvements Districts are organized under Oregon statutes 552.013 to .992 and are created for the purpose of acquiring, purchasing, constructing, improving, operating, and maintaining drainage, irrigation and flood and surface water control works to prevent damage to property and improve agricultural uses of land and waters (O.R.S. § 552.108).

Water Control Districts organized under Oregon Statutes 553.010 to .850 are created to acquire and maintain drainage irrigation and flood surface control works to prevent damage by floods and improve agricultural lands (O.R.S. § 553.020). A water control district constitutes a governmental subdivision of the state exercising public power. A water control district may acquire by condemnation real and personal property and appropriate and acquire water rights for irrigation purposes (O.R.S. § 553.020, 4 and 8).

Creation of a subdistrict requires a petition (O.R.S. § 553.310) by the owners of more than 50% of the acreage located within a district.

To organize a drainage district, a petition must be filed in the office of the county clerk of the county in which the lands are situated (O.R.S. § 547.015). The petition must set forth the boundary lines of the district or describe the lands to be included with an allegation that such lands constitute a contiguous body of swamp, wet or overflowed lands.

The district may irrigate lands when it appears necessary, proper, or beneficial (O.R.S. § 547.320). The district possesses the power to condemn property under § 552.310.

12.4 POLLUTION CONTROL

Oregon has created an Environmental Quality Commission of five members appointed by the Governor and confirmed by the Senate (O.R.S. § 449.016). The Commission is empowered, after appropriate public notices and hearings, to establish policies and standards for statewide water quality (O.R.S. § 468.020). The Commission, however, lacks strong enforcement authority. A waste discharge permit system prohibits discharge into the waters of the state without first obtaining a permit from the Environmental Quality Commission (O.R.S. § 449.083). The only enforcement provisions given the Commission are administrative hearings and suits to enjoin and abate water pollution (O.R.S. § 449.100 and 449.103).

The administrative functioning of the act is delegated to the Department of Environmental Quality. As such the department is directed to (1) encourage voluntary cooperation in restoring and preserving the quality and purity of the waters of the state; (2) conduct studies and investigations pertaining to water quality; and (3) advise, consult, and cooperate with other agencies of the state, the Federal Government, other political subdivisions, and industry regarding water pollution control (O.R.S. § 468.035). The department also has general authority for the enforcement of the water pollution control laws of the state (*Ibid.*). The department has been established of the executive-administrative branch and consists of the director of the department and the other personnel (O.R.S. § 468.030).

The Director functions as the administrative head of the department and is custodian of the records of the department (O.R.S. § 468.045). The Director is appointed by the commission and serves at their pleasure (O.R.S. § 468.040).

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APPENDIX A REPORT 13

SOUTH DAKOTA

13.1 HISTORICAL BACKGROUND

South Dakota is an arid state of 77,047 square miles, receiving an annual precipitation of 19 inches. In 1965, 138,000 acres were irrigated, of which 35,000 acres received water from sprinklers. Over the next nine years reported in the 1974 Irrigation Survey (*Irrigation Journal*, Vol. 24, No. 6, Nov./Dec. 1974), some very erratic changes took place. In just three years, by 1968, the irrigated acreage increased to 414,000 acres, with that irrigated by sprinklers increasing to 40,000 acres in 1966, 124,000 acres in 1967, and 136,000 acres in 1968. From 1970 to 1974 the total irrigated acreage decreased to 210,000 acres in 1970, to 202,000 acres in 1974, with a slight rally in 1972 and 1973. In spite of the decline of sprinkler irrigation in 1970 to 75,000 acres, the use of the method of irrigation increased steadily to 1974 reaching 162,000 acres. It is obvious from these figures that water use efficiency is of great concern to the agricultural water users in South Dakota.

By an enactment in 1866, the Territorial Legislature recognized the private ownership of diffused surface waters and the "natural flow theory " of riparian rights for surface watercourses (Terr. Dak. Laws 1855-66 Civil Code, §256, 1866). A Land Code was enacted in 1877 which specifically recognized a riparian system:

> The owner of land owns water standing thereon, or flowing over or under its surface, but not forming a definite stream. Water running in a definite stream, formed by nature over or under the surface, may be used by him as long as it remains there; but he may not prevent the natural flow of the stream, or of the natural spring from which it commences its definite course, nor pursue nor pollute the same (Rev. Code of 1877, Cov. Code 255).

Ten years later, the Territorial Legislature enacted its first appropriation statute, which provided that:

> Any person or persons, corporation or company, who may have or hold a title to any mineral or agricultural lands within the limits of this territory, shall be entitled to the usual enjoyment of the waters of the stream or creeks in said territory for mining, agricultural or domestic purposes; provided, that the right to such use shall not interfere with any prior right or claim to such waters when the law has been complied with in doing the necessary work (Dak. Comp. Laws, §2029, 1887).

This Act allowed an appropriator to locate and construct ditches, canals and other structures through and over any tract of land (I.D. at §2030, 2031, 1887).

In 1907, a law was enacted which declared all waters of the state to be public waters subject to appropriation for beneficial use (S.D. Laws 1907, c. 180). This statute was held to be unconstitutional as it infringed upon vested rights to use water for domestic and irrigation purposes (*St. Germain Irr. Ditch Co. v. Hawthorne Ditch Co.*, 32 S.D. 260, 143 N.W. 124, 1913). The Supreme Court had previously held that riparian rights could exist only on the basis of reasonable use, thus rejecting the concept of natural flow (*Redwater Land and Canal Co. v. Reed*, 26 S.D. 466, 128 N.W. 600, 1910).

In 1924, the Supreme Court of South Dakota had occasion to consider the effects of the Desert Land Act of 1877 on riparian rights associated with land in the United States public domain (in *Cook v. Evans*, 45 S.D. 31, 185 N.W. 262, 1924). Claimants had asserted claims as appropriators and as riparians. Use had been prior to Feb. 28, 1877, the date the lands had become public domain. The court held that no riparian rights could be acquired before the above date but could have attached after that date and before March 3, 1877 (the date the Desert Land Act had come into effect). The court went on to hold that the effect of the Desert Land Act severed water from the land in the public domain except for the use of water for domestic purposes. All water on the land in the public domain was dedicated to appropriation for irrigation, mining and manufacturing purposes. Thus, after 1877 federal patents did not carry riparian rights except for domestic purposes. The court felt that appropriation rights were superior to all riparian claims if the appropriation rights were perfected before the running of the prescriptive period.

The Supreme Court of South Dakota made a surprising switch in 1940 back to riparian rights in *Platt v. Rapid City* (67 S.D. 245, 291 N.W. 600, 1940). The Court rejected the *Cook* case and reviewed with approval earlier cases which had upheld a riparian system.

Implementation of an appropriation system was attempted again in 1955 (S.D. Comp. Laws Ann., 1960 Supp. 61.0101-61.0159). Care was taken this time to preserve and validate riparian rights in actual use. The Act declared that all water within the state is the property of the people, and the right to the use of water may be acquired by appropriation (S.D.L. §46-1-3, 1967). All vested rights which were acquired before March 2, 1955 (the effective date of the Act) were validated (S.D.L. §46-1-10).

The constitutionality of this Act was upheld in 1964 and 1970 in *Knight v. Grimes* (80 S.D. 517, 127 N.W. 2d 708, 1965) and *Belle Fourche Irrigation District v. Smiley* (84 S.D. 701, 176 N.W. 2d 239, 1970). *Knight* was a case which involved a prior right to percolating waters and the legal implications of voiding unused water rights. The court upheld the 1955 Act as related to the dedication of all waters of the state to the public. Justification for the invasion of pre-existing rights was based on the proposition that South Dakota had never actually recognized an absolute ownership of percolating waters but had taken cognizance of a right of use. The Act was held to be a proper exercise of the police power in that it conserved and protected unused water resources. Vested rights were established when the permits were issued. Therefore, under the water code of 1955, the only way to obtain an appropriation right is to receive a permit issued by the State Water Resources Commission.

The Supreme Court of South Dakota had occasion again in 1970 to uphold the validity of the 1955 Act. The court held that when an application is filed for a permit for the use of unappropriated waters, the Water Resources Commission, as a prerequisite, must make a determination of the existence of vested rights which have been preserved by this statute. The court later stated that the rights of a riparian who owned land prior to March 2, 1955, to water for purpose of irrigation, or any other use except domestic use, became vested in him only to a beneficial use prior to March 2, 1955; after that date, he could acquire irrigation rights only by appropriation and such rights were subject to prior appropriations (Belle Forche Irr. Dist. v. Smiley, 204 N.W. 2d 105, 1973).

In South Dakota, spring waters are controlled by appropriation laws and landowners may appropriate water from springs through the permit system (S.D.L. §46-5-3). The fact of riparian ownership does not allow the owner of such a right to prevent the flow nor pollute the waters (S.D.L.§46-5-1). In Benson v. Cook (47 S.D. 611, 201 N.W. 526, 1924), the Supreme Court of South Dakota enjoined the construction of a ditch taking the flow of subterranean waters supplying a natural spring which had in turn contributed to a definite stream.

Comprehensive ground water legislation was enacted in 1955 (S.L., 1955, ch. 413, §1). The legislation extended public ownership to ground water which included underground streams, artesian basins and percolating waters (S.D.L. §46-1-1 to 23).

13.2 SUBSTANTIVE LAW

13.2.1 Property Right in Water

In South Dakota, the riparian rights doctrine is the historical basis of use. But, since 1955 all new uses must be appropriative. The appropriative right is a usufructuary right and the basis is beneficial use (S.D.L. §46-1-18).

Water flowing in a natural stream is not subject to private ownership. Any private rights that do attach are strictly usufructuary rights to take the water and apply it to a beneficial use. In a certain sense, the water which flows in a stream belongs to the public and is subject to private rights of use by appropriators (St. Germain Irrigating Ditch Co. v. Hawthorne Ditch Co., 32 S.D. 260, 142 N.W. 124, 1913).

The general rule is that the one who diverts water from a natural stream and beneficially uses such water becomes the owner of the particles of such water. In Robbins v. Rapid City (71 S.D. 171, 23 N.W. 2d 144, 1946), the South Dakota Supreme Court held that when water has been impounded and reduced to possession, it is personal property and when separated from its source it may be bought and sold like other commodities.

In 1913, the Supreme Court of South Dakota stated that water which flowed in a natural stream belonged to the public, but the right to its use is a subject of private property and ownership by riparian owners or others who had lawfully appropriated and each rightful user and appropriator may acquire no more than his fair and equitable share (St. Germain Irrigating Ditch Co. v. Hawthorne Ditch Co., 32 S.D. 260, 143 N.W. 124, 1913).

In 1955, the South Dakota Legislature passed the following statute which declares all waters within the state to be the property of the people:

> It is hereby declared that all water within the state is the property of the people of the state, but the right to the use of water may be acquired by appropriation in the manner provided by law (S.D.L. §46-1-3).

In regard to natural springs arising on one's land, the Supreme Court of South Dakota stated in 1895 that:

> while it may not be technically correct to say that the landowner is the absolute owner of percolating waters gathered into a spring or well, the landowner's right is practically equivalent to ownership, the exclusive right to use and dispose of such waters (Metcalf v. Nelson, 8 S.D. 87, 65 N.W. 911, 1895).

Now, South Dakota legislation allows the owner of land on which a natural spring arises and which constitutes the source or part of the water supply of a definite stream to appropriate the flow from such spring (S.D.L. §46-5-3).

Since the appropriation doctrine was adopted exclusively in 1955, protection of vested rights was spelled out to ensure the constitutionality of the statutes of 1955. A vested right is defined as: (1) the right of a riparian owner to continue the use of water having actually been applied to any beneficial use on March 2, 1955, or within three years immediately prior thereto to the extent of the existing beneficial use made thereof; (2) use for domestic purposes; (3) the right to take and use water for beneficial purposes where a riparian owner was engaged in the construction of works for the actual application of water to a beneficial use on March 2, 1955, provided such works shall be completed and water is actually applied for such use within a reasonable time thereafter; (4) rights granted before July 1, 1955 by court decree; and (5) uses of water under diversions and applications of water prior to the passage of the 1907 water law and not subsequently abandoned or forfeited (S.D.L. §46-1-9).

13.2.2 Acquisition of Right

Since 1955, the exclusive method of acquiring an appropriative right is through compliance with statutory law. Applications for permits to divert unappropriated water must be made to the Water Rights Commission. Each applicant is given a specific time to construct the project and to place the water to a beneficial use (S.D.L. §46-5-21). A certificate of completion is issued upon completion of a project (S.D.L. §46-5-28 and 29). When the water is applied to a beneficial use, a license will be issued (S.D.L. §46-5-30).

Broad discretion is placed in the hands of the Water Rights Commission to grant or reject an application for a permit. Rejection can come if there is no unappropriated waters available or if approval of the application would be injurious to the public interest (S.D.L. §46-5-28 and 21).

Furthermore, South Dakota statutes provide that a land owner may neither pollute nor prevent the natural flow (1) of a stream, (2) of a natural spring from which it commenses its definite course, or (3) of a natural spring arising on his land which flows into and constitutes a part of the water supply of a natural stream (S.D.L. §46-5-30).

Priority of the right is the date the application was filed (S.D.L. §46-5-7). As between appropriators, the first in time is the first in right. The priority of the appropriation dates from the time of filing of the application in the office of the Water Rights Commission (S.D.L. §46-5-7).

As previously stated (Belle Fourche Irr. Dist. v. Smiley, 204 N.W. 2d 105, 1973), the rights of a riparian who owned land before March 3, 1955, to water for the purpose of irrigation is vested only if he had applied the water to a beneficial use prior to that date. After this date, irrigation rights could only be acquired by appropriation. In Lone Tree Ditch Co. (5 S.D. 519, 91 N.W. 352, 1902), the court stated that the riparian right of an owner to use waters for irrigation is subject to the priority of all riparian owners to use such waters for domestic purposes or for watering stock as the use or extraordinary use as opposed to a natural or ordinary use.

The Supreme Court stated in 1910 that riparian rights are appurtenant to the land. These rights are classified into two divisions; first, the natural or ordinary use which includes the use of water for domestic purposes and for watering stock, and second, the extraordinary or artificial purpose which includes irrigation, manufacturing and mining. The upper riparian owner is given preference over the lower riparian owner as to ordinary uses in that he may use all of the water of the stream to the exclusion of the lower owners. If the lower owner's use is ordinary, then he has a preference over the rights of any riparian owner who is using the water for an artificial purpose. Between riparian owners who are both using the water for an artificial use, there is no priority in point of time of settlement or from a geographical location of the land (Ibid.)

Ground Water--
Three-fourths of the water used in South Dakota comes from underground sources (Kerr and Tipton, S.D. Groundwater Supplies"). In 1955, public ownership was extended to ground water which included underground streams, artesian basins and percolating waters (S.D.L. §46-1-1 to 23). Diversion and application of ground water to a beneficial use, if effected before February 28, 1955, is considered a vested right. Any person with the intent to divert ground water is required to notify the commission. Users engaged in the construction of works on February 28, 1955, are entitled to finish construction and apply the water to a beneficial use. If the works were completed within a reasonable time, then the right is vested.

South Dakota has no laws specifically dealing with the prerequisite of appropriating artesian waters nor for protecting the means of delivery. However, the policy of South Dakota Water Rights Commission is to protect the means of delivery, regardless of the reasonableness, and prior appropriators who have and continue to use artesian pressure. The effect is to protect all senior appropriators who utilize artesian pressure as a mode of delivery.

Prescriptive Water Rights--
South Dakota statutes do not deal with the acquisition of water rights by prescription. In Cook v. Evans (45 S.D. 31, 185, N.W. 262, 1924), the South Dakota Supreme Court felt that certain riparian claims could be acquired by prescriptive use but such rights would be inferior to appropriative rights if the appropriative right was perfected before the running of the prescriptive period.

Preferences--
The term preference, when used in a water use context, can mean several things. A preference when exercised in times of shortages means that the water will be devoted to the preferred use instead of a nonpreferred use. Preferences can also come into play when water is insufficient for all proposed uses and applicants compete for permits. Application of the preference statute would dictate that the proposed preferred use would prevail regardless of the priority of the filing date (Trelease, 1955).

South Dakota's preference statute provides that:

> the use of water for domestic purposes is the highest use of water and takes precedence over all appropriative rights, if such use is exercised in a manner consistent with public interest (S.D.L. §46-1-5).

12.2.3 Adjudicating Water Rights

As was previously stated, in South Dakota riparian rights are the historical basis of some uses but all new uses are appropriative. The resolution of water rights is by a general adjudication and all claimants "so far as they can be ascertained with reasonable diligence" must be joined in any action (S.D.L. §46-10-3). The Water Resources Commission may request the State Attorney General to initiate adjudication proceedings (S.D.L. §46-10-1 and 2), or may intervene in an existing action to protect the public interest (S.D.L. §46-10-7). Judgments are to fully define the rights of each party in the areas of priority, nature of use, place, point of diversion, and the quantity of water awarded (S.D.L. §46-10-8).

The Attorney General is under the obligation to enter an original suit on behalf of the state to determine conflicting water rights when the Commission decides that the public interest requires such action (S.D.L. §46-10-1).

13.2.4 Conditions of Use

Beneficial Use--
Beneficial use is the basis, the measure and the limit of the right to use water (S.D.L. §46-1-18). Beneficial use is any use of water that is reasonable and usufruct and beneficial to the appropriator and at the same time is consistent with the interests of the public in the best utilization of water supplies. It is the policy of the state to put water resources to a beneficial use, to the fullest extent possible (S.D.L. §46-1-4). South Dakota statutes provide that:

> In the issuance of permits to appropriate water for irrigation, or in the adjudication of rights to the use of water for such purpose, the amount allowed shall not be in excess of the rate of one cubic foot of water per second for each seventy acres, or the equivalent thereof, and the volume of water diverted for use shall not exceed three acre-feet per acre, delivered on the land for a specified time each year (S.D.L. §46-5-6).

In Stenger v. Tharp (17 S.D. 13, 94 N.W. 402, 1903), the court held that the rights of a party in appropriating water are limited to the amount he actually uses for a beneficial purpose. Any water not applied to a beneficial use would be subject to forfeiture. The duty of water for irrigation purposes is not to be in excess of one cubic foot per second for each 70 acres and not to exceed three acre-feet per acre delivered on the land for a specified period each year (S.D.L. §46-5-5 and 46-5-6).

Waste--
Although waste water has not been specifically defined by South Dakota courts, it can be defined as surplus water running off of irrigated land, i.e., that water which has neither evaporated nor soaked into the soil.

Therefore, waste water is that water which results from excessive diversions or applications and accumulates in tailwater control ditches at the ends of fields, barrow pits, ponds along canals, or otherwise finds its way back to the river, lake, or underground waters. It is waters that are diverted under the exercise of a valid water right. It is now lost under current practices, but might be saved through more efficient methods of use and diversion (Hutchins, 1974, pp. 568-569).

Public policy dictates that the upper irrigator should not be compelled by the law to continue his waste to provide a downstream user with a supply of the waste waters. There have been no cases in South Dakota on this particular point of law. However, South Dakota statutes provide that:

> It is hereby declared that because of conditions prevailing in this state, the general welfare requires that the water resources of the state be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable method of use of water be prevented, and that the conservation of such water is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare. The right to water or to the use or flow of water in or from any natural stream or watercourse in this state is and shall be limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use or unreasonable method of diversion of water (S.D.L. §46-1-4).

The unauthorized use of water or the willful waste of water, to the detriment of another or to the public in general, is a misdemeanor punishable by a fine of not less than twenty nor more than one hundred dollars or by imprisonment in the county jail for thirty days or less or both (S.D.L. §46-5-46). Furthermore, appropriation in excess of the reasonable needs of the appropriators is not allowed (S.D.L. §46-5-5).

13.2.5 Manner in Which Rights May Be Adversely Affected

Forfeiture and Abandonment--
Abandoned appropriative rights are subject to statutory forfeiture after a period of nonuse for three years. If this occurs, water becomes unappropriated public water (S.D.L. §46-5-37).

The statute on abandonment reads as follows:

> If the owner of the land to which water has become appurtenant abandons the use of such water upon such land, such water shall become public water, subject to general appropriations (S.D.L. 46-5-36).

Abandonment requires a subjective intent to abandon coupled with the nonuse (*Cundy v. Weber*, 68 S.D. 214, 300 N.W. 17, 1941). The intent not to repossess the water right is an essential feature of abandonment (*Edgemont Improvement Co. v. N.S. Tubbs Sheep Co.*, 22 S.D. 142, 115 N.W. 1130, 1908). The Supreme Court has held that a riparian's right to use the waters of a flowing stream cannot be lost by nonuse. The Court further held that the above statute is void as to a riparian owner but valid as to one who is an appropriator without riparian rights (*St. Germain Irrigating Ditch Co. v. Hawthorne Ditch Co.*, 32 S.D. 260, 143 N.W. 124, 1913).

Adverse Possession--
South Dakota does not recognize the acquisition of water rights by adverse possession.

Condemnation--
Section 46-8-1 allows the United States, this state, any person, or any private or public corporation to exercise the right of eminent domain. South Dakota statutes provide that:

> In all cases where any person, group, or corporation, public or private, including the owners of water rights, ditches, flumes, reservoirs, and mining property under the provisions of the laws of Congress, invested with the privilege of taking or damaging private property for public use, in making, constructing, repairing, or using any work or improvement allowed by law, shall determine to exercise such privilege, it shall file a petition in the circuit court of the county in which the property to be taken or damaged is situated, praying that the just compensation to be made for such property may be ascertained by a jury (S.D.L. §21-35-1).

Enforcement of Beneficial Use or Waste Concepts--
An appropriator is limited to the quantity of water specified in his permit subject to a beneficial use. If the appropriator fails to apply the specified quantity in his permit to a beneficial use, the unused water is subject to the provisions of the forfeiture statute.

13.2.6 Legal Incentives and Disincentives for More Efficient Water Use Practices

Irrigation Return Flow--
Irrigation return flows occur from the deep percolation of water from overapplication to the land, seepage from conveyance systems, and tail water runoff. While there have been no cases in South Dakota regarding the appropriation of waste waters, there is a statutory provision which states that water turned into any natural or artificial watercourse by a person entitled to the use of such waters may be reclaimed below and diverted, subject to existing rights and due allowance for losses being made (S.D.L. §46-5-14).

Provision for Transfer of Water Rights and Diversions--
Change in the place of use is authorized if it has become impractical to use all or any part of the water beneficially or economically. There is no loss of priority if the change has the approval of the Commission. Permits may be sold, transferred and assigned (S.D.L. §46-5-32), with one exception relating to irrigation. Irrigation water rights cannot be assigned or transferred unless it is in relation to a transfer of land to which the water is attached (S.D.L. §46-5-33 to 35).

13.2.7 Waste Water Disposal and Drainage

Disposal of Waste Water--
The disposal of diffused surface waters in rural areas is governed by the civil law rule. In urban areas such disposal is governed by the reasonable use rule.

The civil law rule places an easement on the lower landowner for the drainage of surface water in its natural course. The natural flow cannot be obstructed by the lower landowner to the injury of the upper landowner (Johnson v. Metropolitan Life Ins. Co., 71 S.D. 155, 22 N.W. 2d 737, 1946).

The reasonable use rule as previously mentioned is applied to urban areas. Each landowner is privileged to make a reasonable use of his land even if the flow of surface waters is altered to the injury of another, so long as the interference is not unreasonable (Mulder v. Tague, 186 N.W. 2d 884, 1971).

13.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

13.3.1 State Water Agencies

The State Water Resources Commission, renamed the Water Rights Commission (S.D.L. §46-2-1.1), decides upon applications for permits to divert unappropriated water and is given the task of "general supervision and distribution of the waters of the State, including the measurement, appropriation and distribution thereof" (S.D.L. §46-2-9). The circuit court of the county in which the point of diversion is located hears appeals from the Commission's decisions (S.D.L. §46-5-23). In the event of a conflict, the Commission or district court which has jurisdiction is authorized to appoint a water master with the consent of the water users. This is to insure a proper distribution among the users. Enforcement of an adjudicated decree or a delivery schedule is the task of the master. Appeal from the master's decisions go first to the Commission and from there to the circuit court.

South Dakota's Water Conservancy District law coordinates water conservation practices. Its function is to provide for efficiency in irrigation, stabilization in the production of crops, the replenishment and restoration of waters, and the reservation of beneficial use (S.D. Comp. Laws Ann., 1960 Supp. 61.1401 (2) to (4a)). The South Dakota Water Rights Commission is the Board of Directors of the District. The Board can exercise eminent domain, contract and organize water conservancy sub-districts. A petition of 25 percent of the landowners in the proposed sub-district must have the approval of the District Board of Directors. The electors within the proposed district must approve by a 60 percent or more vote. If the requisite percentage is obtained, the sub-district is created, named and a copy of resolution filed with the Secretary of State. The Board of Directors, who must be landowners within the sub-district area, is not to exceed eleven in number. Nomination is by petition of 50 landowners in the area to be represented.

13.3.2 Judicial Bodies

South Dakota does not have special water courts. Circuit courts hear appeals from the Water Rights Commission decisions. District courts appoint water masters with the consent of the water users. Water masters' decisions may be appealed to the circuit court.

Irrigation districts (S.D.L. §46-12-1 to 89), drainage and conservancy districts (S.D.L. §46-17-1 to 84), and watershed districts (S.D.L. §46-24-1 to 84) are given authorization to build water projects. Creation of all special districts is through a petition, a public hearing and a favorable vote of the electorate. Although water users associations are not utilized in South Dakota, there is a chapter which deals with these associations.

Irrigation districts are corporations with a public purpose; and while subdivisions of the state, they differ from counties and like political units in that they function for profit and are purely for business without a governmental purpose.

Section 46-13-23 states that it is the duty of the Board of Directors of any district or association to keep the water flowing through the ditches and canals under its control to the full capacity of such ditches and canals in times of high water and when the same can be beneficially applied to the lands thereunder and does not interfere with the rights of other appropriators. The Board of Directors also has the duty to apportion waters equitably when there is an insufficient supply S.D.L. §46-13-25).

Any water conservancy district has the power to exercise eminent domain as set down in 21-35 after declaring the necessity for and purpose of the taking of property (S.D.L. §46-16-44).

In Black Hills Power and Light Co. v. Shuft (193 N.W. 2d 429), the South Dakota Supreme Court held that a grant of right to take water from a canal imposed no duty upon the grantor to maintain the canal or provide an alternate method of transporting the water, in the absence of an express or implied agreement.

In Jewett v. Redwater Irrigating Association (220 N.W. 2d 834), the court held that, where the by-laws of an irrigation association did not expressly provide that the water represented by shares of the association were appurtenant to the land on which it was used, then such water did not become appurtenant to the land.

13.4 POLLUTION CONTROL

A water use control area requires a petition from the requisite number of water users (S.D.L. §46-10-14). A public hearing must be held by the Commission to establish the feasibility of a control area and to distribute the water supply among the holders of record (S.D.L. §46-10-16 to 19). The state Water Pollution Control Act creates a committee on water pollution which is composed of the State Health Officer, the Director of the Department of Game, Fish and Parks, Chief Engineer of the Water Rights Commission, and four electors of the state to be appointed by the Governor (S.D.L. §46-25-1). All public waters must be classified either Class A or Class B. Class A waters are suitable for domestic use and are not deleterious to fish and plant life. Navigable and interstate waters cannot be classified under "B". After December 31, 1973, all public waters must be designed under Class A (S.D.L. §46-25-5).

The enforcement of water quality standards begins when a hearing is held to establish standards of water quality and a time is specified within which discharges of waste into Class A waters are to comply with Class A standards (S.D.L. §46-25-8 and 9). A permit must be obtained from the Committee if new pollutants are discharged into Class A waters. If the discharge does not meet Class A standards, then the violator will be directed to discontinue the discharge (S.D.L. §46-25-10 to 13). The Committee may force compliance with its orders by initiating court action. Furthermore, criminal sanctions are provided for a violator of either the Act or of the Committee's orders (S.D.L. §46-25-15 and 16).

The Boundary Waters Treaty of 1909 (Treaty with Great Britain Relating to Boundary Waters Between the U.S. and Canada, Jan. 11, 1909, 36 Stat. 2448, T.S. No.

548) provides a course of environmental action for Canadian citizens in the United States courts against the Federal Government for polluting waters crossing the boundary. The Treaty requires the United States to protect the interests of Canadian citizens by not polluting waters which cross the boundary. A working group was implemented in 1973 to develop a solution for handling return flows from irrigated lands of the Garrison Diversion Unit. A further study in 1974 discovered increased salinity of the Souris River, an increase in the nutrient load and increased flood potential from irrigation return flows. The Bureau of Reclamation proposed dilution of return flows into the Souris River through (1) increased releases of water from the Missouri River; (2) construction of treatment plants to reduce salinity in return flows; and (3) the collection of return flows in a reservoir.

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APPENDIX A REPORT 14

TEXAS

14.1 HISTORICAL BACKGROUND

Texas is a state with much variation geographically in the annual precipitation, but generally receives an average annual precipitation of 31 inches. According to the 1974 Irrigation Survey, irrigated acreages in 1965 of 7,800,000 acres have increased to a reported 8,500,000 acres in 1973, almost strictly in the area of sprinkler irrigation (Irrigation Journal, Vol. 24, No. 26, Nov./Dec., 1974). In 1965, 1,205,000 acres were sprinkler irrigated, increasing to 1,950,000 acres in 1973.

Texas is both an appropriation and riparian rights state.[1] Appropriation rights, however, are of greater significance. By statute, Texas does not recognize riparian rights in the owner of lands acquired after July 1, 1895. Controversy over the existence of riparian rights concerned land grants of the 18th and 19th century, along with the Lower Rio Grande from Spain and Mexico. A 1961 case held that these grants did not carry with them appurtenant irrigation rights (Texas v. Valmont Plantations, 346 S.W. 2d 853, Tex. Civ. App. 1961). The court reached the conclusion that there was no evidence of customary riparian rights for irrigation in the civil law of Spain and Mexico governing navigable streams. Irrigation rights must, therefore, rest on specific grants from the sovereign.

Specific grants of irrigation rights were made by Mexico even after Texas acquired its independence in 1836. Between 1836 and 1840, the aforementioned civil law governed the Republic of Texas. In 1840, Texas adopted the common law system of England, which introduced riparian water law. Riparian theory was the basis of Texas law from 1845 to 1889.

The appropriation system, though limited to the arid portions of Texas, was introduced in 1889 (The Irrigation Act of 1889, Tex. Gen. Laws, 1889, ch. P. 100). This Act provided that an appropriator might obtain a water right by diversion and application of that water to a beneficial use. The appropriator was required to file an affidavit and map illustrating the diversion works and describing the proposed use with the County Clerk.

Revisions were had in 1895 (Tex. Gen. Laws, 1895, ch. 21, p. 21), which divided public waters into two categories: "ordinary flow and underflow" and "storm or rain waters." Riparian rights could only attach to the first category. There was no provision for forfeiture in the event the appropriator failed to file. Affidavits under this provision required a showing of the approximate number of acres to be irrigated; the name, size, capacity, and location of the ditch; the appropriators name and the stream from which water was diverted. Perfection of the water right occurred upon completion of the works and the diversion of the water. The question of whether riparian rights were superseded by the appropriation system remained unanswered.

The first appropriation act to have statewide application was the Burgess-Classcock Act of 1913 (Tex. Gen. Laws, 1913, ch. 171, P. 358), which repealed earlier acts. County Clerks were given a specified time within which to file certified copies of all instruments in their offices which related to the appropriation of water with the Board of Water Engineers. A permit system was introduced which superseded the County Clerk filing procedure.

The Canales Act of 1917 (Tex. Gen. Laws, 1917, ch. 88, P. 211) revised and expanded the Burgess-Classcock Act. The permit system, which is still in use in Texas, was retained. A procedural aspect for adjudicating water rights was declared to be unconstitutional in Board of Water Engineers v. McKnight on the ground that judicial functions were unlawfully delegated to an administrative agency (111 Texas 82, 229 S.W. 301, 1921). This decision did not, however, affect the permit system.

A 1917 constitutional amendment preserved the distinction between ordinary flow waters and storm waters (Texas Const., Art. 16, §59.a). This distinction was removed in 1921. Although ordinary flow waters could now be appropriated, vested rights of riparians would not be prejudiced. Applications to appropriate normal flow water in Texas streams have been regularly denied since 1948 because most rivers have been appropriated.

Texas has been forced to confront the existence of water rights stemming from a variety of sources. Modern water management requires a system where the existence of water rights, old and new, can be ascertained and described with a high degree of accuracy. Texas policy is outlined in Section 1.003:

> It is the public policy of the state to provide for the conservation and development of the state's natural resources, including:
> (1) the control, storage, preservation, and distribution of the state's storm and flood waters and the waters of its rivers and streams for irrigation, power, and other useful purposes;
> (2) the reclamation and irrigation of the state's arid, semi-arid, and other land needing irrigation;
> (3) the reclamation and irrigation of the state's overflowed land and other land needing drainage;
> (4) the conservation and development of its forest, water and hydroelectric power; and
> (5) the navigation of the state's inland and coastal waters.

14.2 SUBSTANTIVE LAW

14.2.1 Property Right in Water

Section 5.021 provides that the water of the ordinary flow, underflow and tides of every bay or arm of the Gulf of Mexico, and the storm water, flood water and rain water of every river, natural stream, canyon, ravine, depression, and watershed in the state is the property of the state. This statute further states that water which is imported from any source outside the boundaries of the state for use in the state which is transported through the beds and banks of any navigable stream within the state or by utilizing any facilities owned or operated by the state is the property of the state (T.C.A. §5.021(a) and (b)).

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[1] See Hutchins, Wells A., The Texas Law of Water Rights, 1961, for an excellent discussion of the entire gamut of Texas Water Law.

As stated in South Texas Water Co. v. Bieri (247 S.W. 2d 268, Civ. App., 1952), the waters of public streams belong to the sovereign and are held by the sovereign in trust for the public. Water flowing in a natural stream is not subject to private ownership. Any rights which do attach are strictly usufructuary rights to take water from the stream and apply it to a beneficial use. Private rights of ownership do not attach to the corpus of the water so long as it remains in the stream (Haas v. Choussard, 17 Tex. 588, 1856).

The appropriative right is a usufructuary right, the basis of which is beneficial use (T.C.A. §5.002). In Diversion Lake Club v. Heath (126 Tex. 129, 86 S.W. 2d 441, 1935), the court held that a permit to appropriate water gave the appropriator no title to the water, but merely the right to divert and use such water that could be beneficially used. Further, "the first in time is first in right" concept applies in Texas (T.C.A. §5.027). A claimant must lay hold of the quantity required for use to acquire a usufructuary interest. One does not own the corpus of the water until it enters his ditch, and the right to have the water flow into the ditch appertains to the ditch (Lakeside Irr. Co. v. Markham Irr. Co., 116 Tex. 65, 285 S.W. 593, 1926). While water is in canals for irrigation purposes, it is real property (Mudge v. Hughes, 212 S.W. 819, Tex. Civ. App., 1919). The right which an appropriator acquires is a private property right subject to ownership and disposition by him (Clark v. Briscoe Irr. Co., 200 S.W. 2d 674, Tex. Civ. App., 1947). In Goodwin v. Hidalgo County, Water Control and Improvement District No. 1 (58 S.W. 2d 1092, 1933), the court stated that a water right constitutes real property. Such a water right, when acquired and perfected either under the posting or permit system, constitutes a vested interest in the title to the use of the water thereby appropriated (58 S.W. 2d 1092, 1933).

14.2.2 Acquisition of Right

Section 5.022 provides that the right to the use of state water may be acquired by appropriation in the manner and for the purposes as provided. When the right to use state water is lawfully acquired, it may be taken or diverted from its natural channel.

The exclusive method for acquiring an appropriation right is through the adherence to the procedures of the permit system. These procedures, as stated in Section 5.123, require:

> (a) An application to appropriate unappropriated state water must:
> (1) be in writing and sworn to;
> (2) contain the name and post office address of the applicant;
> (3) identify the source of water supply;
> (4) state the nature and purposes of the proposed use and the amount of water to be used for each purpose;
> (5) state the time within which the proposed facilities are to be completed;
> (6) state the time within which the proposed construction is to begin; and
> (7) state the time required for the application of water to the proposed use.
> (b) If the proposed use is irrigation, the application must also contain:
> (1) a description of the land proposed to be irrigated; and
> (2) an estimate of the total acreage to be irrigated.
> (c) If the application is for a seasonal permit, under the provisions of Section 5.136 of this code, the application must also state the months or seasons of the year the water is to be used.
> (d) If the application is for a temporary permit, under the provisions of Section 5.137 of this code, the application must also state the period of the proposed temporary use.

Section 5.124 provides further that:

> (a) The application must be accompanied by a map or plat drawn on tracing linen, on a scale not less than one inch equals 2,000 feet.
> (b) The map or plat must show substantially:
> (1) the location and extent of the proposed facilities;
> (2) the location of the headgate, intake, pumping plant, or point of diversion by course and distance from permanent natural objects or landmarks;
> (3) location of the main ditch or canal and the locations of the laterals or branches of the main ditch or canal;
> (4) the course of the water supply;
> (5) the position, waterline, and area of all lakes, reservoirs, or basins intended to be used or created;
> (6) the point of intersection of the proposed facilities with any other ditch, canal, lateral, lake, or reservoir; and
> (7) the location of any ditch, canal, lateral, reservoir, lake, dam, or other similar facility already existing in the area, drawn in a different colored ink than that used to represent the proposed facilities, and the name of the owner of the existing facility.
> (c) The map or plat must also contain:
> (1) the name of the proposed facility or enterprise;
> (2) the name of the applicant; and
> (3) a certificate of the surveyor, giving the date of his survey, his name and post office address, and the date of the application which the certificate accompanies.

When an appropriator has used water for three years under the terms of a certified filing or a permit, he acquires a title to his appropriation which limits other claimants, including riparian users (T.C.A. § 5.029). The appropriator is entitled to a continuing right to the use of such waters that have been appropriated, but not beyond that reasonably required and actually used (Arizona v. California, 56 S. Ct. 848, 298 U.S. 558). Specifically stated in the statutes:

> A right to use state water under a permit or a certified filing is limited not only to the amount specifically appropriated, but also to the amount which is being or can be beneficially used for the purposes specified in the appropriation, and all water not so used is considered not appropriated (T.C.A. §5.025).

Ground Water--
Ground water in Texas is considered to be percolating water and is privately owned by the landowner (City

of Corpus Christi v. City of Pleasanton, 154 Tex. 289, 276 S.W. 2d 798, 1955). Therefore a landowner can take all percolating waters that can be beneficially used and is entitled to use it on or off the land from which it is withdrawn. The landowner can sell the water and it can be taken outside the basin where it is produced.

In Houston and T.C.R.R. v. East (98 Tex. 146, 81 S.W. 279, 1904), the Texas Supreme Court adopted a rule applicable to rights in the percolating waters in litigation and refused to apply any principle from the law of running streams thereto.

Absent evidence that ground waters move in underground streams with defined channels, it is presumed to be ordinary percolating waters and the exclusive property of the owner of the surface of the land, and subject to barter, sale or lease as any other species of property (Texas Co. v. Burkett, 117 Tex 16, 296 S.W. 273, 1927).

Prescriptive Water Rights--
To constitute adverse possession sufficient to deprive an owner of legal title to his property by an adverse claimant, such possession must be continuous and uninterrupted for the statutory period and it must be actual, notorious, distinct, and hostile, and of such character as to indicate unmistakably an assertion of claim of exclusive ownership in the occupant (Heard v. State of Texas, 146 Tex. 139, 204 S.W. 2d 344, 1947; and Motl v. Boyd, 116 Tex. 82, 286 S.W. 458, 1926).

Preferences--
A system of preferences is established when uses conflict. First priority goes to domestic and municipal uses, followed by industrial uses, irrigation, mining, hydroelectric power, navigation, recreation and pleasure, and other beneficial uses (T.C.A. §5.024).

14.2.3 Adjudicating Water Rights

Water rights in any stream may be adjudicated on motion by the Texas Water Rights Commission; on petition to the Commission signed by ten or more claimants of water rights from the source of supply; or on petition of the Texas Water Development Board (T.C.A. §5.304). "Adjudicated water rights" means those adjudicated in judicial (and administrative) proceedings (State v. Hidalge County Water Control and Improvement Dist. No. 18, Civ. App. 1969, 443 S.W. 2d 728):

> (a) Promptly after a petition is filed under Section 5.304 of this code, the Commission shall investigate the facts and conditions necessary to determine whether the adjudication would be in the public interest. If the Commission finds that an adjudication would be in the public interest, it shall enter an order to that effect, designating the stream or segment to be adjudicated and directing an investigation to be made of the area involved in order to gather relevant data and information essential to the proper understanding of the claims of water rights involved. The results of the investigation shall be reduced by writing and made a matter of record in the Commission's office.
> (b) In connection with the investigation, the Commission shall make a map or plat showing with substantial accuracy the course of the stream or segment and the location of reservoirs, diversion works, and places of use, including lands which are being irrigated or have facilities for irrigation (T.C.A. §5.305).

The Water Rights Adjudication Act (T.C.A. §5.301-5.341) permits the adjudication of all water rights outstanding on a stream or segment of a stream. The Act also provides for a system of recording claims of water rights. The Act covers riparian water rights, claims under the Irrigation Acts of 1889 and 1895 which were not previously filed, special claims under Section 5.151 to impound, divert, or use water for other than livestock or domestic purposes, and other claims of water rights other than claims under certified filings or permits.

Also, under the Act each claimant must file a statement with the Commission before Sept. 1, 1969, which shows the location and the nature of the water right, the stream from which such right is claimed, the date of the commencement of the works, dates, volumes of use, and other pertinent information (T.C.A. §5.303).

14.2.4 Conditions of Use

Beneficial Use--
Beneficial use is the basis, the measure, and the limit of the right to use water. In Texas Water Rights Commission v. Wright (464 S.W. 2d 642, Sup. 1971), the court considered the beneficial use concept. Beneficial use of waters is the conservation of the resource. The nonuse of appropriated waters is the equivalent to waste. Therefore, inherently attached to a permit to appropriate waters is the duty that the appropriator will beneficially use the water.

The court in Texas Water Rights Commission (supra) further held that water permits owners are not vested with a right to nonuse for an indefinite time and although a matured appropriation right to water is a vested right, that right is limited to beneficial and nonwasteful uses.

Beneficial use is defined as the right to the amount of water which is economically necessary for a purpose authorized when reasonable intelligence and reasonable diligence dictate such use (T.C.A. §5.002). Section 5.023 lists the purposes for which water may be appropriated. It further states that water may be stored or diverted for other beneficial uses.

Finally, Section 5.081 provides that:

> (a) No person may willfully take, divert, or appropriate any state water for any purpose without first complying with all applicable requirements of this chapter.
> (b) A person who violates any provision of this section is guilty of a misdemeanor and upon conviction is punishable by a fine of not more than $100, or by confinement in the county jail for not more than six months or by both.
> (c) A person commits a separate offense each day he continues to take, divert, or appropriate water in violation of this section.
> (d) Possession of state water when the right to its use has not been acquired according to the provisions of this chapter is prima facie evidence of a violation of this section.

Enforcement measures are provided for in Section 5.082:

> (a) A person who fillfully takes, diverts, or appropriates state water without complying with the applicable requirements of this chapter is also liable to a penalty not to exceed $100 per day for each day he continues the taking, diversion, or appropriation.

> (b) The state may recover the penalties prescribed in Subsection (a) of this section by suit brought for that purpose in a court of competent jurisdiction.
> (c) An action to collect the penalty provided in this section must be brought within one year from the date of the alleged violation.

Waste--
The waste of water is the opposite of using the water beneficially.

> A person who owns or has a possessory right to land contiguous to a canal or irrigation system and who acquires the right by contract to use the water from it commits waste if he: (1) permits the excessive or wasteful use of water by any of his agents or employees; or (2) permits the water to be applied to anything but a beneficial use (T.C.A. §5.092).

The above statute is given enforcement authority by the provision of Section 5.093 which states:

> (a) A person who permits an unreasonable loss of water through faulty design or negligent operation of any waterworks using water for a purpose named in this chapter commits waste; and the Commission may declare the works to be a public nuisance. The Commission may take the necessary action to abate the nuisance. Also, any person who may be injured by the waste may sue in the district court having jurisdiction over the works causing the waste to have the operation of the works abated as a public nuisance.
> (b) In case of a wasteful use of water prohibited by Section 5.092 of this code, the Commission shall declare the use to be a public nuisance and shall act to abate the nuisance by directing the person supplying the water and to keep them closed until the Commission determines that the unlawful use of water is corrected.

Further enforcement authority is included in Section 5.095. This statute provides that a person who willfully or knowingly commits waste is guilty of a misdemeanor and upon conviction is punishable by a fine of not more than $500 or by confinement in the county jail for not more than 90 days or by both.

The language in Texas Water Rights Commission v. Wright (464 S.W. 2d 642) is of particular importance. The court stated that a workable system to regulate the appropriation of waters has produced the rule that the beneficial use of waters is the conservation of that resource. Inherently attached to a permit to appropriate waters is the duty to use the water beneficially. Water permit owners are not vested with the right of nonuse for an indefinite period of time. At all times the state has certain rights as the owner of the water. Furthermore, the court stated that, although an appropriation right to water is a vested right, the right is limited to beneficial and nonwasteful uses.

14.2.5 Manner in Which Water Rights May Be Adversely Affected

Abandonment and Forfeiture--
Grounds for revocation of a permit is nonuse for ten consecutive years. This raises a presumption of abandonment. The Water Rights Commission has inaugurated a vigorous cancellation program to achieve an optimum utilization of the state's water resources. In Texas Water Rights Commission v. Wright (464 S.W. 2d 642, Sup. 1971), the Texas Supreme Court upheld the constitutionality of the forfeiture statute on the grounds that, even though water rights can be considered a "vested" property interest, no one has a vested right to nonuse. The court construed this statute as creating a conclusive presumption of abandonment after a period of ten years of nonuse.

Section 5.173 provides that, if no part of the water authorized to be appropriated under a permit or certified filing has been put to beneficial use at any time during the ten-year period immediately preceding, then the appropriation is presumed to have been willfully abandoned, and the permit or certified filing is subject to cancellation. Another statutory provision states:

> If any lawful appropriation or use of state water is willfully abandoned during any three successive years, the right to use the water is forfeited and the water is again subject to appropriation (T.C.A. §5.030).

Riparian water rights may be lost by prescription (Martin v. Burr, 111 Tex. 57, 228, S.W. 543, 1921), estoppel, and the use of water on nonriparian land (Watkins Land Co. v. Clements, 98 Tex. 597, 86 S.W. 733, 1905). Such riparian rights cannot, however, be lost by abandonment.

Adverse Possession--
The actual use of water as an element of the prescriptive water right is analogous to the requirement that adverse possession of land includes an actual, distinct, and visible appropriation of the land (Heard v. State of Texas, 146 Tex. 139, 204 S.W. 2d 344, 1947). The use of water must be open, visible and notorious in order to put all upon inquiry as to the right claimed by the adverse user (Kountz v. Carpenter, 206 S.W. 109, Tex. Civ. App., 1918).

Condemnation--
Texas, like the other western states, has adopted provisions which recognize the need to provide water for domestic and municipal purposes above and beyond the conventional appropriation methods. It enables all political subdivisions of the state and constitutional governmental agencies to exercise the power of eminent domain to acquire water for domestic, municipal, manufacturing, irrigation, and other purposes authorized by the water code (T.C.A. §5.033).

Enforcement of Beneficial Use or Waste Concepts--
An appropriator is limited to that quantity of water specified in his permit which he can beneficially use. Any water not so used is subject to the provisions of the forfeiture statute, or is considered not appropriated. Therefore, the right one obtains by a permit for appropriated water is limited to beneficial and nonwasteful uses (T.C.A. §5.025).

14.2.6 Legal Incentives and Disincentives for More Efficient Water Use Practices

Irrigation Return Flow--
A downstream senior appropriator is entitled to have the stream flow in a sufficient quantity to satisfy the existing appropriation. Therefore, an upstream junior appropriator cannot use water if that use would deprive the downstream senior of the appropriated quantity.

In Harrell v. Vahlsing (248 S.W. 2d 762), the Court of Civil Appeals of Texas held that all persons, or agencies, or districts, with the possible exception of the State of Texas, possessed a usufructuary right in the waters of its own drainage ditch. Texas courts have held that waters entering into and flowing through the drainage ditches are developed or captured waters. The Board of Water Engineers would, therefore, have authority to issue permits controlling their use. Having the usufruct of the drainage waters, the owner may sell the water unless such a sale would be contrary to public policy. If, after using the water, the appropriator does nothing to recapture the excess before it leaves the appropriator's land or project, the appropriator has no right to the escaped water. A 1918 case (Kounty v. Carpenter, 206 S.W. 109, Civ. App. 1918) held that plaintiffs' use of excess water which ran through defendant's ditch did not destroy the defendant's prescriptive title to such water. Texas has no statute referring to the right to appropriate seepage waters from constructed works.

A person who takes or diverts water from a running stream for the purpose authorized by this code is required to return surplus water to the stream from which it was taken if the water can be returned by gravity flow and if it is reasonably practicable to do so (T.C.A. §5.046).

Section 5.046 requires an appropriator to return surplus water back to the stream from which it was taken if the water can be returned by gravity flow and if it is reasonably practicable to do so, thus it appears that a downstream user having relied upon this return flow could by appropriating this water and applying it to a beneficial use rely upon the protection of the law. There is no statute in Texas allowing an appropriator to reclaim used water. It should be noted, however, that salvaged waters are not considered public waters and, therefore, are not subject to an acquisition by appropriation.

Salvaged and Developed Waters--

A downstream senior appropriator is entitled to his appropriation even if this would deprive an upstream junior of appropriated water. This is the case even if the junior appropriator could derive more economic benefit from the use of the water. Where a person by his own efforts has increased the flow of water in a natural stream, he is entitled to the use of the water to the extent of the increase (Harrell v. Vahlsing Inc., 248 S.W. 2d 762, Tex. Civ. App. 1952).

Provisions for Transfer of Water Rights and Diversions--

Section 5.040 provides that a permanent water right is an easement and passes with the title to land. The Rules and Regulations of the Texas Water Rights Commission provide rules governing the transfer of water rights:

> When water rights are transferred there shall be recorded in the office of the County Clerk the written instrument or transfer showing the number of the permit, certified filing certificate of adjudication, or claim, and the name and address of the new owner. A certified or photocopy of the instrument as recorded shall be filed with the Commission. Where water rights involve irrigation, the Commission will recognize the following:
> (a) Transfer of land and water right: The right to use water for the purpose of irrigation is appurtenant to the land which is authorized to be irrigated, and title to the land unless expressly reserved or excepted.
> (b) Reservation of water rights: Whenever the owner reserves the water right from the conveyance of land authorized to be irrigated and desires to change the place of use, the point of diversion, or the purpose of use theretofore made of the water, an application for amendment must be filed with the Commission as provided by Rule 605 or 610.
> (c) A water right may be conveyed separate from the land, provided, however, the water right must be utilized in accordance with its terms and conditions until amended by the Commission as provided in these rules.
> (d) Other transfers: A water right does not attach to the irrigated land when held by a water corporation or water district authorized to supply water to others, or when the water right is not limited to lands specifically described by meters and bounds. Only by express written conveyance can such water right be transferred. The foregoing is subject to all laws relating to lawful rights of owners along ditches and canals.
> All water rights other than for irrigation can be transferred only by written instrument expressly transferring same (T.C.A. §510.3).

In Clark v. Briscoe Irr. Co. (200 S.W. 2d 674, Civ. App. 1947), the court stated that a perfected water right constitutes a vested interest in or title to use of the water is assignable except where it is attached to specific land. This right carries with it the incidental right to change the use of water to any lawful place or purpose other than that designated in the original appropriation.

14.2.7 Waste Water Disposal and Drainage

Section 5.021(a) states that waters of natural streams or watercourses are the property of the state, including "the storm water, flood water, and rain water of every river,natural stream, canyon, ravine, depression, and watershed." The Texas Supreme Court, in Turner v. Big Lake Oil Co. (128 Tex. 155, 96 S.W. 2d 221, 1936) held the above statute to be unconstitutional to the extent that the language purported to convert diffused surface water into public water on lands patented by the state before 1913.

The landowner has property rights in diffused surface water under the civil law rule. Section 5.140 gives a landowner the right to construct a reservoir up to a 200 acre-foot capacity upon his property for livestock and domestic purposes without the acquisition of an appropriate water permit. Therefore, diffused surface waters can be impounded without consideration of a downstream user.

As to the disposal or diversion of diffused surface waters, the Texas courts again have followed the civil law rule. Therefore, the upper proprietor has the right to have diffused surface waters flow naturally from his land to the land of a lower riparian who has no right to obstruct the flow and cast water back upon the above land. If a flow has been changed to accelerate or concentrate the flow, the lowerowner may repell the flow.

14.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

14.3.1 State Water Agencies

Administrative control of water rights is vested in the Texas Water Rights Commission.[2] The Commission will grant an application if unappropriated water is available, if the water will be put to a beneficial use, if the use will not impair existing water rights or vested riparian rights, and if the use is not detrimental to the public welfare (T.C.A. §5.133).

The Commission has broad discretion in considering one application over another. In City of San Antonio v. Texas Water Commission (407 S.W. 2d 752, Sup. Ct. Tex. 1966), the court upheld a decision by the Commission which had given preference to an applicant who had not contemplated on interbasin transfer. Decisions of the Commission are subject to judicial review.

After an administrative investigation is made, notice to all water users involved in the proposed adjudication must be given. The claimants are required to file sworn statements. After these procedures have been followed, a hearing will be held by the Water Commission. Final determination is filed in the district court of the county containing the stream involved in the adjudication. Only questions of fact raised in the record of the hearing before the Commission will be reviewed by the court.

As was stated earlier, the permit system was adopted in Texas in 1913 and it is the exclusive method of acquiring an appropriation right. The Texas Water Commission has the authority to pass upon competing applications for permits. All appropriations are a matter of record, giving priority to claims as a matter of record.

The Commission has the power to appoint an executive director, the chief administrative officer. The staff consists of an hydrologist and other specialists in the area of water administration. The Commission may enforce its rules by injunction. Judicial review is available to aggrieved parties. The Commission must evaluate outstanding permits and certified filings and cancel unused permits.

Seasonal (T.C.A. §5.136), temporary (T.C.A. §5.137), and emergency (T.C.A. §5.1371) permits can be issued by the State Water Rights Commission. The other agency involved in the management of the state's water resources is the Water Development Board (T.C.A. §11.001-11.503), which is given the responsibility of making studies which relate to the occurrence, quantity, quality, and availability of surface and ground waters. The Board is required to prepare a comprehensive state water plan to be a flexible guide to state policy regarding the development of water resources.

14.3.2 Judicial Bodies

Texas does not have special water courts. Appeal of Commission's decisions are appealable to the appropriate district court.

14.3.3 Water Users and Their Organizational Structure

Districts--

Districts are corporations with a public purpose; and while they are subdivisions of the state, they differ from counties and like political units in that they function for profit and are organized for a business purpose rather than a governmental purpose (Ball v. Rio Grande Canal Co., 256 S.W. 678, Tex. Civ. App., 1923). The purposes of a water district are set out in Section 51.121:

> (a) A water control and improvement district organized under the provisions of Article III, Section 52, of the Texas Constitution, may provide for:
> (1) the improvement of rivers, creeks, and streams to prevent overflows, to permit navigation or irrigation, or to aid in these purposes; or
> (s) the construction and maintenance of pools, lakes, reservoirs, dams, canals, and waterways for irrigation, drainage, or navigation, or to aid these purposes.
> (b) A water control and improvement district organized under the provisions of Article XVI, Section 59, of the Texas Constitution may provide for:
> (1) the control, storage, preservation, and distribution of its water and flood water and the water of its rivers and streams for irrigation, power, and all other purposes;
> (2) the reclamation and irrigation of its arid, semi-arid, and other land which needs irrigation;
> (3) the reclamation, drainage, conservation, and development of its forests, water, and hydroelectric power;
> (4) the navigation of its coastal and inland water;
> (5) the control, abatement, and change of any shortage or harmful excess of water;
> (6) the protection, preservation, and restoration of the purity and sanitary condition of water within the state; and
> (7) the preservation and conservation of all natural resources of the state.
> (c) The purposes stated in Subsection (b) of this section may be accomplished by any practical means.

To enforce appropriate regulations, the districts may set reasonable penalties, not to exceed fines of more than $200 or imprisonment for more than 30 days or both. These penalties are in addition to other penalties provided for by the laws of the state. Such penalties may be enforced by complaints filed in the appropriate court of jurisdiction in the county in which the district's principal office is located (T.C.A. §51.131).

The governing body of a district is a board of directors who may award the use of district water in the following order of preference and superiority:

> (1) domestic and municipal use;
> (2) industrial use, other than the development of hydroelectric power;
> (3) irrigation;
> (4) development of hydroelectric power;
> (5) pleasure and recreation;
> (b) The board may withdraw water from an inferior use and appropriate the water to a superior use when required for the welfare of the district.

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[2] Letter to the principle investigator from Robert E. Schneider, Executive Director of the Texas Water Rights Commission, April 22, 1976.

> (c) The board must use the condemnation procedures in Subchapter F of this chapter for a withdrawal or diversion of the use of water which affects a vested right (T.C.A. §51.184).

Transfer of a water right is allowed by Section 51.186:

> If there is land in a district which has a water right from a source of supply acquired by the district but the land is difficult or impracticable to irrigate from that source of supply, the district may allow transfer of the water right to other land which is adjacent to the district with the same right of water service as the land from which the water was transferred.

The districts are authorized to sell surplus water for use in irrigation, domestic, or commercial uses to any person who owns or uses land in the vicinity of the district or to other districts which include land in the same vicinity (T.C.A. §51.188).

Texas statutes provide for the creation of Underground Water Conservation Districts (T.C.A. §52.001 et. seq.) in order to conserve, preserve, protect, recharge, and prevent the waste of underground water (T.C.A. §52.021).

In Garwood Irrigation Co. v. Lower Colorado River Authority (387 S.W. 2d 746), the court held that farmers served by an irrigation system had no rights except through the company whose rights entitled it to take Colorado River water to irrigate specified acreage. The farmers were not appropriators but rather they were customers of an appropriator.

In Ball v. Rio Grande Canal Co. (256 S.W. 678, 1923), the court stated that it is the well-settled law that irrigation companies organized for the purpose of irrigating lands are, in their nature, quasi public corporations. Because of this, persons holding lands contiguous to their canals are entitled to receive water from such companies as a matter of right, when paid for, limited only by prior contracts or by such other limitations which may be imposed by law.

In Willis v. Neches Canal Co. (7 S.W. 2d 184), the court held that a landowner's right to priority in the use of water must be determined as if Texas statutes had been written into the contract with the irrigation company.

14.4 POLLUTION CONTROL

The Water Quality Board is required to adopt standards for all waters within the state. These waters have been divided into zones and a determination has been made as to the uses which were practical within each zone. The Board establishes both standards which are applicable to all waters of the state and specific water parameter values for each stream. A determination can then be made of the level of waste each stream can withstand according to its designated uses. Both the Board and the Attorney General share the task of enforcing the water quality standards.

Section 21.002 declares it to be the policy of the state to maintain the quality of water consistent with the public health and enjoyment, the propagation and protection of terrestrial and aquatic life, the operation of existing industries, and the economic development of the state.

The Water Quality Board establishes the level of water quality to be maintained and controlled in the state (T.C.A. §21.061). The State Water Quality Act (T.C.A. §21.001-21.612) empowers the State Water Quality Board to adopt standards for all Texas waters.

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APPENDIX A REPORT 15

UTAH

15.1 HISTORICAL BACKGROUND

Utah is the second most arid state in the continental U.S.A., receiving an annual precipitation of 13 inches. It has three major rivers--the Colorado, Sevier and Bear. From 1963 to 1974, the irrigated acreage increased steadily from 1,200,000 acres to 1,680,000 acres. Those lands receiving sprinkler irrigation likewise made a steady increase from 34,500 acres in 1968 to 67,948 in 1972. But, in 1974, there was a 20 percent increase reported, with 161,400 acres irrigated by sprinklers ("Irrigation Survey, 1974").

Although the increased use of sprinkler irrigation has raised the level of efficiency among many water users, this issue has introduced another problem of concern for the State Engineer. A detrimental effect on return flow occurs as a result of greater efficiency in application, particularly where the same amount is diverted by the water right holder(s) but not applied to more acres. The State Engineer's office has been conducting extensive investigations into the impacts of canal lining and transfering from flood to sprinkler irrigation (letter to author from Utah State Engineer dated April 5, 1976). Because of the low precipitation rate, water allocation and administration in Utah has played a very important role in the development and history of the state.

Water rights law in Utah evolved from the irrigation practices initiated by the first Mormon pioneers to arrive in the Great Salt Lake Valley (Dewsnup and Jensen, 1973, p. 715). These pioneers were the first Anglo-Saxons in the United States to practice irrigation on an extensive scale (Hutchins and Jensen, 1965, p. 1). Because of the arid nature of the region, the diversion and application of the water to the surrounding land made the adoption of an appropriation system a necessity. In its earliers decisions (1878-1880) involving water, the Territorial Supreme Court recognized the appropriation doctrine as the basic water law of the territory (*Crane v. Winsor*, 2 Utah 248, 1878; and *Munroe v. Ivie*, 2 Utah 535, 1880). In later decisions, the Utah Supreme Court ruled that the riparian doctrine had never constituted a part of the Utah water law (*Gunnison Irr. Co. v. Gunnison Highland Canal Co*., 52 Utah 347, 174 P.852, 1918). The Utah constitution recognizes and confirms all existing rights to the use of water for any useful and beneficial purpose.

Before 1903, the way to acquire water rights was to divert the water from its natural channel and apply it to a beneficial use. Upon completion of these steps, the user acquired a valid right to the water which was known as a diligent right (*Yardley v. Swapp*, 12 U.2d 146, 364 P.23 4, 1961).

Early legislation allowed other means to acquire water rights. For a period of 28 years (1852 to 1880), county courts were given the power to grant water privileges. This method was then replaced with provisions which allowed county commissioners to determine claims to use water.

In 1897, a specific statutory procedure was enacted to acquire water rights. The users had to post notice, file a copy with the county recorder and complete his project within a reasonable time. Priority related back to the posting of the notice. However, rights could still be acquired by diversion and beneficial use. use. In 1903, the legislature again acted and produced a law which provided that an appropriative water right could be acquired only through the filing of an application with the State Engineer (Hutchins and Jensen, 1965 pp. 10-15). Any owners of water rights which were initiated before 1903 but not perfected were allowed a reasonable time to beneficially use the water and gain a perfected right (*Jensen v. Birch Creek Ranch*, 76 U. 356, 289 P. 1097, 1930).

15.2 SUBSTANTIVE LAW

15.2.1 Property Right in Water

The Utah legislature has declared that all water in the state, whether above or below the ground, is the property of the public (Utah Const., Art. XVII, §1; U.C.A. §73-1-1, 1953).

All waters in Utah are subject to appropriation provided such water is used for a beneficial purpose (U.C.A. §73-1-31, 1953).[1] An appropriator must have a possessory right to the land upon which the water is applied, though title need not reside in the appropriator (*Lake Shore Duck Club v. Lake View Duck Club*, 50 U.S. 76, 166 P. 309, 1917; *Jensen v. Birch Creek Ranch Co*., loc. cit.).

A water right in Utah is treated as a type of real property and is protected in the same manner as other real property (*In re Bear River Drainage Area*, 2 U.2d 208, 271 P.2d 846, 1954). As is common in stated applying the appropriation doctrine, the right to the use of water is a usufructuary right. This right, a right to the use of water, is distinguished from a right to the body of the water itself (*Salt Lake City v. Salt Lake City Water and Electrical Power Co*., 24 U. 249, 67 P. 672, 1902). The right is based on quality as well as quantity in Utah (*Salt Lake City v. Boundary Springs Water Users Ass'n*., 2U.2d 141, 270 P.2d 453, 1954). Due to the nature of water, whether it is in streams or in basins above or underground, it is not subject to absolute ownership in the same way as other property, but it belongs to the public. Rights to its use are appropriable by private individuals only (*Fairfield Irr. Co. v. White*, 18 U. 2d 93, 416 P.2d 641, 1966).

Water flowing in a natural stream is not the subject of private ownership. Any private rights which do attach are strictly usufructuary rights to take the water from the stream and apply it to a beneficial use. Therefore, private rights of ownership do not attach to the corpus of the water if it remains in the stream in its natural state (*Adams v. Portage Irr. Res. and Power Co*., 95 U. 1, 72 P.2d 648, 1937).

Denial of private ownership in the corpus is subject to the existence and protection of valid rights to capture, possess and beneficially use such waters (*Oldroyd v. McCrea*, 65 U. 142, 235 P. 580, 1925). It is only when the water has been diverted into private conduits with the state's permission that the diverter can claim a qualified ownership in the water (*Spanish Fork Westfield Irr. Co. v. District Court*, 99 U. 527, 104 P.2d 353, 1940).

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[1] Beneficial use is the basis, the measure and the limit of all rights to use water in Utah. See also U.C.A. §73-3-1, 1953.

However, in In re Bear River Drainage Area (2U. 2d 208, 271 P.2d 846, 1954), the Utah Supreme Court held that private waters are subject to exclusive control and ownership and can be used, sold, or wasted! This is in direct conflict with Utah's policy of conservation.

For taxation purposes, water has been divided into two categories: (1) water which flows in a natural stream or tidch; and (2) water in the pipes of a distributing system (Bear Lake and River Waterworks and Irr. Co. v. Ogden, 8 U. 494, 33 P. 135, 1893). The first category is not subject to ownership as far as the corpus of the water is concerned and is exempt from taxation if the land to which it is appurtenant has been taxed. The second category is considered personal property and is not subject to taxation in Utah (Baird v. Upper Canal Irr. Co., 70 U. 57, 257 P. 1060, 1927). An action for damages for injury to fish and fish ponds is one for injury to personal property (Resse v. Qualtrough, 48 U. 23, 156 P. 955, 1916).

The right which an appropriator gains is a private property right subject to ownership (In re Bear River Drainage Area, loc. cit.) and is considered a valuable property right (Hammond v. Johnson., 94 U. 20, 66 P.2d 894, 1937).

An appropriator is entitled to a continuing right to the use of such waters that have been appropriated, but not beyond that reasonably required and actually used (Arizona v. California, 56 S. Ct. 848, 298 U.S. 558).

> An appropriation of water flowing on the public domain consists in the capture, impounding, or diversion of it from its natural course or channel and its actual application to some beneficial use (Black's Law Dictionary, 4th Edition).

15.2.2 Acquisition of Right

Rights to the use of unappropriated public water can be acquired only by filing an application to appropriate. This statutory procedure is the exclusive method of appropriating water (U.C.A. §73-3-1).[2]

Applications for water rights may be filed by persons, associations, corporations, and public agencies (U.C.A. §73-3-2). Upon receipt of an application, notice is published in the county where the point of diversion is located. Objection to the application may be submitted within thirty days of the last publication date. If a protest is filed, the application is set for hearing by the State Engineer (U.C.A. §73-3-6 to 73-3-7).

Before approving an application, the State Engineer must find that: (a) there is unappropriated water in the source; (b) the proposed use does not impair existing rights, or interfere with a more beneficial use; (c) the proposed plan is physically and economically feasible; and (d) the applicant has the financial ability to complete the works and the application was not filed for purposes of speculation or monopoly (U.C.A. §73-3-8 Supp.). Applications, in marginal cases, will be approved in light of the policy of the state to promote the greatest possible beneficial use of its water resources (Little Cottonwood Water Co. v. Kimball, 76 U. 243, 289 P. 116, 1930). The applicant, however, has the burden of showing that all statutory requirements have been met (Shields v. Dry Creek Irr. Co., 12 U.2d 98, 363 P.2d 82, 1961).

Once water has been placed to beneficial use, the applicant submits proof and is issued a certificate of appropriation which is recorded in the county recorder's office. A certificate of appropriation constitutes prima facie evidence of a water right (U.C.A. §73-3-17). After the certificate has been filed, the only requirement is to preserve the validity of the right--to continue to use the beneficial use of the water in the manner provided for by the certificate (Dewsnup and Jensen, 1973, p. 724). An application has priority as of the date it was filed in the State Engineer's office (U.C.A. §73-3-1).

The State Engineer's office, under Section 73-3-8, is to maintain an orderly and efficient system for the appropriation, distribution and conservation of water. This is to allow as much water to be beneficially used as possible (Bullock v. Hanks, 22 U.2d 308, 452 P.2d 866, 1969).

In U.S. v. District Court of 4th Judicial District (121 U. 18, 242 P.2d 774), the court construed Section 73-3-11 to require approval or rejection of an application. If the application is approved, the applicant is authorized to proceed with the proposed work. If, however, it is rejected, the applicant is forbidden to proceed. (Financial ability to complete the needed work is not specifically mentioned in Section 73-3-11.)

In Wayman v. Murray City Corp. (23 U.2d 97, 458 P.2d 861, 1969), the Utah Supreme Court stated that the policy of this statute was to insure both the highest development possible and the most continuous beneficial use of available water with a minimum of waste. An appropriation must consist of a diversion (an actual taking) of water from a natural channel by means of a ditch or other structure, and a beneficial application (use of the water within a reasonable time) (Sowards v. Meagher, 37 U. 212, 108 p. 1112, 1910); Wrathall v. Johnson, 86 U. 50, 40 P.2d 755, 1935).

The appropriation must be for good faith purposes, not for speculation (U.C.A. §73-3-8). In cases where construction is required, proof of the financial ability to complete the needed work is mandatory (U.C.A. §73-3-8, see also 73-3-11).

There is no statutory directive for a finding that the use proposed in the application be a beneficial use. The directions to the State Engineer contained in the statute have been considered by the Utah Supreme Court on a number of occasions. The court has taken a liberal view of the legislative intent that the public waters of the state be made available for beneficial use. State policy, as expressed by statute, is that "new appropriations should be favored and not hindered" (Little Cottonwood Water Co. v. Kimball, loc. cit.; Whitmore v. Welch, 114 U. 578, 201 P.2d 954, 1949). The court has recognized the rejection of specific applications in the interest of the public welfare even though all the waters of a stream have not been appropriated (Tanner v. Bacon, 103 U. 494, 136 P.2d 957, 1943). But, when the question of unappropriated water is in doubt, the State Engineer should have the power to approve the application and afford an orderly recourse to the courts (Rocky Ford Irr. Co. v. Kents Lake Res. Co., 104 U. 202, 135 P.2d 108, 1943; Lehi Irr. Co. v. Jones, 115 U. 136, 202 P.2d 892, 1949).

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[2] See Hanson v. Salt Lake City, 115 U. 404, 205 P.2d 255, 1949 ; Bullock v. Tracy, 4 U.2d 370, 294 P.2d 707, 1956.

The Supreme Court of Utah has held that the State Engineer is to determine if there are unappropriated waters which can be appropriated for a beneficial use without impairing existing rights or interferring with a more beneficial use, and whether the proposed plan is both feasible and within the financial ability of the applicant (*Bullock v. Tracy*, 4 U.2d 294 P.2d 707, 1956). Furthermore, the State Engineer is to reject applications only when it is clear that the applicant can establish no valuable rights through the proposed appropriation.

It is significant that the State Engineer is given authority to determine only that the proposed will neither interfere with an existing use not prove detrimental to the public welfare. If the State Engineer has reason to believe that more beneficial uses of the water will be interfered with, or that the public welfare will be adversely affected, approval or rejection of the application will be withheld pending an investigation (U.C.A. §73-3-8).

Ground Water--
Early decisions classified ground water as water flowing in a definite underground stream, the underflow of surface streams and percolating water (*Chandler v. Utah Copper Co.*, 43 U. 479, 135 P.106, 1913). All ground water within the state is now subject to appropriation which has destroyed the above distinctions.

In 1935, the Utah Supreme Court abandoned the correlative rights doctrine which had been adopted in *Horne v. Utah Oil Refining Co*. (59 U. 279, 202 P.815, 1921). This abrogation took place in *Wrathall v. Johnson* (86 U. 50, 40 P.2d 755, 1935), which also held that percolating ground water was subject to the appropriation doctrine.

Ground water rights can only be acquired by filing an application to appropriate with the State Engineer (U.C.A. §73-3-1). Underground water which is diffused and percolating through the soil to the surface and sustains beneficial plant life, and follows no traceable course to a watercourse or the lands of another is exempt from this statute (*Riordan v. Westwood*, 115 U. 215, 203 P.2d 922, 1949).

The rule of reasonableness governing the allocation of the right to use underground water requires an analysis of the total situation, including the quantity of water available, average annual recharge in the underground water basin, and existing rights and priorities. All users must employ reasonable and efficient means in taking water and avoid the wastage of waters to allow the greatest amount of water to be put to a beneficial use (*Wayman v. Murry City Corp*., 23 U. 2d 97, 458 P.2d 861, 1969).

Past court decisions have tended to delay, if not preclude, more effective use of ground water basins (Interim Report on State Water Plan, 1970). Since ground water reservoirs can be managed in the same manner as surface reservoirs, failure to manage them results in the waste of water through inadequate reservoir capacity or the need to invest in alternative storage surface facilities.

Moreover, the emphasis upon preserving the static head probably has limited the extent to which the surface and ground water systems are operated together for maximum effectiveness. This is a situation similar to the concept that an appropriator is entitled to have conditions maintained on the stream as they were when the appropriation was made. The static head is analogous to the height of a stream. Since ground water reservoirs are subject to annual recharge, and many surface rights are based on return flow which is a form of recharge, these waters are all interconnected and suited to operation in conjunction with each other. That is, the ground water reservoir could be utilized to meet daily and seasonal water peaks and as a reserve supply for use in prolonged drought periods (*Ibid*., p. A5).

Prescriptive Water Rights--
By statute, there is no right to use water adversely which may ripen into an acquired right (U.S.C. §73-1-4). The consequence of this is that, should an appropriator's right be used without consent, no adverse right will result. The right will, however, be forfeited at the end of a five-year period and revert to the public.

Preferences--
There are no preferences among uses when competing applications are filed. An application will be rejected if it would interfere with a more beneficial use of the water or would prove detrimental to the public welfare (U.C.A. §73-3-8).[3] In times of scarcity, domestic uses have top priority, followed by agricultural uses.

15.2.3 Adjudicating Water Rights

Prior to 1903, the principal manner by which rights were obtained was by diversion of water from a natural channel and application to a recognized beneficial use. Once this was accomplished, the user acquired a right to the water. These early water rights have come to be known as "diligence rights" (*Yardley v. Swapp*, loc. cit.). The owner of a diligence right, not otherwise of record, may file a diligence claim in the State Engineer's office. Under statute, a claim once filed constitutes prima facie evidence of a water right (U.C.A. §73-5-13). The procedure by which a water right could be acquired under the diligence method ended in 1903 when the legislature provided that an appropriation could be acquired by filing an application with the State Engineer (Hutchins and Jensen, 1965, pp. 10-15). Owners of the pre-1903 rights, which had not been perfected, were allowed a reasonable time within which to place the water to beneficial use and thus perfect the right (Utah Laws, 1903, ch. 100 at 106-07; *Jensen v. Birch Creek Ranch*, loc. cit.).

The only significance of an historical diversion (a diligence right) is that it could be perfected without complying with the statutory procedure now in force. Both historical and statutory rights are subject to the supervision of the State Engineer and may be lost if not placed to beneficial use. This follows from the concept that beneficial use is the basis, measure and limit of a right to use water in Utah (Utah Const. Art XVII, §1; U.C.A. §73-1-3).[4] It may also follow from the public policy against the waste of water (*Little Cottonwood Water Co. v. Kimball*, loc. cit.; *Wayman v. Murry City Corp*., loc. cit.). The State Engineer is charged with regulating water to prevent uses of water that are detrimental to the public welfare (U.C.A. §73-1-4). As with historical and statutory rights, there is little difference between historical diversions and statutory diversions in adjudication involving a water conflict.

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[3] See also *Tanner v. Bacon*, loc. cit.

[4] See also McNaughton v. Eaton, 121 U. 394, 242 P.2d 570, 1952).

Historical diversions and appropriative rights granted by the State Engineer are subject to the judication powers of the court.

The statutory adjudication procedure is the principal method for resolving water use conflicts in Utah.[5] This procedure provides for a comprehensive determination of all rights to a stream or water source (both historical and those granted under statute by the State Engineer). This procedure is designed to prevent piecemeal litigation legislation regarding water rights (those problems resulting from a lack of definition of the extent of an individual right or from a lack of integration of all rights into a single decree or distribution schedule) (Smith v. District Court, 69 U. 493, 256 P.539, 1972; In re Bear River Drainage Area, loc. cit.).

The State Engineer, on petition of the water users or the district court, can order a general adjudication (U.C.A. §73-4-1). All known water users are served by publication with notice of the proceeding (U.C.A. §73-4-4). Each of these users is required to file a water users claim setting forth the details of the right claimed. These claims, standing in lieu of pleadings, frame the issues (U.C.A. §73-4-5, 73-4-15). Failure to file a claim after proper notice results in the water user being barred from subsequently asserting any rights. Failure to file a claim is deemed to be a forfeiture of all rights claimed (U.C.A. §73-4-9).[6]

The first step in this procedure is for the State Engineer to prepare a hydrographic survey encompassing all uses of the source involved. The State Engineer proposes a determination of water rights from this survey and any other relevant information. This determination is mailed to individual users who may then submit written protests to the district court within 90 days (U.C.A. §73-4-11). These protests are tried before the district court with all interested parties present. If no protests are filed, the district court enters a judgment in accordance with the proposed determination of water rights as submitted by the State Engineer (U.C.A. §73-4-12).

The district court is not bound to accept the recommendations of the State Engineer. These recommendations, however, carry substantial weight since they were gathered from the information that formed the basis for the proposed determination (Garrison v. Davis, 88 U. 358, 54 P.2d 439, 1936). This adjudication is a determination of all rights which had been or could have been asserted in such a proceeding (Green River Adjudication v. United States, 17 U.2d 50, 404 P.2d 251, 1965). Further, it is proper for the court to set a duty of water, and thereby limit individual appropriators to beneficial use requirements (In re Water Rights of Escalante Valley Drainage Area, 10 U.2d 77, 348 P.2d 679, 1960).

This procedure has been upheld against constitutional tests that it confers judicial powers upon the State Engineer, an administrative officer (Eden Irr. Co. v. District Court of Weber County, 61 U. 103, 211 P.957, 1922). The only difference of any significance between an historical (diligence) water right and a water right granted by the State Engineer is that the former was granted as a result of a diversion while the latter was granted as the result of a statutory procedure. The former is not exempt from any of the current procedures for adjudication. It may be lost for failure to be used in a beneficial manner or for failure to be claimed in an adjudication procedure. It appears that the only significant difference is one of history.

15.2.4 Conditions of Use

Beneficial Use--
The term beneficial use is not defined by statute in Utah. It is, however, the "basis, the measure and the limit of all rights to the use of water" in the state (Utah Const. Art XVII, §1; U.C.A. §73-1-3).[7] This position has been repeatedly substantiated.

The Utah Supreme Court has recognized several uses as being beneficial: domestic use, stock watering, irrigation, municipal, power, manufacturing, mining, and fish culture (Hutchins and Jensen, 1965, p. 23). The use of applicable water for the recovery of salts and other minerals is recognized both by statute (U.C.A. §73-3-8) and by the Utah Supreme Court (Deseret Livestock Co. v. State, 110 U. 239, 171 P.2d 401, 1946). The latter decision has obvious implications for control of the salinity problem in the state of Utah.

The State Engineer is not given authority to determine what is a beneficial use. A final determination of what constitutes a beneficial use must be made by appeal to the court. This results in an arrangement by which decisions of the State Engineer are often appealed to the District Court and even to the Supreme Court. Decisions of the State Engineer are one element to be weighed by the court and are given special weight in the same manner of a quasi-judicial finding. Questions as to whether a use is beneficial and establishing preferences in uses can best be accomplished by a trier of facts (Fairfield Irr. Co. v. White, loc. cit.).

Water may not be appropriated in excess of the quantity. It may be used for the beneficial purpose designated by the appropriation (Crawford v. Lehi Irr. Co., 10 U.2d 165, 350 P.2d 147, 1970).[8] The finding of intent to apply water to a beneficial use seems to be a judicial function following a finding by the State Engineer on any specific application. Further, the State Engineer has an implied right to determine beneficial use in consideration of whether a proposed project would be detrimental to the public welfare (U.C.A. §73-3-8).[9]

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[5] Letter to principal investigator from Dee C. Hansen, State Engineer, May 9, 1975.

[6] Since the decree will be binding on the grantee of a water user, it has been held that a grantee may file a petition of his own--especially where he would be bound by the order of his grantor. See Garrison v. Davis, 88 U. 359, 54 P.2d 439, 1936.

[7] See also Gunnison Irr. Co. v. Gunnison Highland Canal Co., loc. cit.; and McNaughton v. Eaton, loc. cit..

[8] One case, Silver King Consolidated Mining Co. v. Salton, 85 U. 297, 39 P.2d 682, 1934, held that the actual beneficial use made of the water--not the amount in the application--was the limit of the right.

[9] See also Tanner v. Bacon, loc. cit.

In one adjudication, there was expert testimony to the effect that certain lands not under irrigation could be irrigated successfully with reasonably efficient construction works. In light of this testimony, the Utah Supreme Court held it to be the duty of the water users to prepare their land properly, to provide reasonably efficient diversion and distribution systems, and reasonably efficient methods of applying water to the soil (Hardy v. Beaver County Irr. Co., 65 U. 28, 234 P.524, 1924).

Since early in its history, water in Utah has been distributed in rotation (delivered to each user at definite intervals throughout the irrigation season) (Thomas, 1920, pp. 26 and 109). The Utah Supreme Court has approved the use of the rotation system where the practice served the best interests of the community.[10] Though some uncertainty was initially expressed regarding the power to impose a rotation plan on a nonconsenting user, later decisions have approved this practice without qualification by the trial courts (Big Cottonwood Tanner Ditch Co. v. Shurtliff, 49 U. 569, 164 P. 856, 1917).

Reference to the duty of water can be found only by implication from the definition of beneficial use. The implication exists that any water used beyond the requirements for a specific use would exceed the duty of water. Thus, nonbeneficial use would be considered a nonuse and therefore be subject to the statutory forfeiture procedure.

The decision in In re Water Rights of Escalante Valley Drainage Area (loc. cit.) held that it is necessary and proper to limit prior appropriators to a volume of water reasonably required to raise crops under reasonably efficient methods of irrigation. The right of a water user to beneficial use requirements includes the ability to place demands on all upstream sources which supply the stream (Richlands Irr. Co. v. Westview Co., 96 U. 403, 80 P.2d 458, 1938).

Waste--

It is contrary to public policy in Utah to waste water (Little Cottonwood Water Co. v. Kimball, loc. cit.; Wrathall v. Johnson, loc. cit.; and Wayman v. Murry City Corp., loc. cit.). There is a positive duty in Utah to return surplus water to the stream from which it was taken (Brian v. Fremont Irrigation Co., 112 U. 220, 186 P.2d 588, 1947).

It would seem to follow from the beneficial use doctrine that wasting water for a period of five years would be considered "nonuse" under the forfeiture statute. However, there has not been a specific decision on this point.

A water user is entitled to use waste and seepage waters as long as he has it in his possession and control (McNaughton v. Eaton, loc. cit.). An original appropriator is not required to maintain a wasteful method of use for the purpose of supplying water for another appropriator (Smithfield West Bench Irr. Co. v. Union Central Life Ins. Co., 105 U. 468, 142 P.2d 866, 1943).

Utah has a policy of prohibiting the waste of water (Little Cottonwood Water Co. v. Kimball, loc. cit.; and Wayman v. Murry City Corp., loc. cit.), which would indicate that Utah is pursing the most efficient beneficial use of the state's water. It has been held that there is a duty to return surplus waters to the stream from which they were taken (Brian v. Fremont Irr. Co., loc. cit.). This decision is consistent with both the policy prohibiting waste and that of applying the greatest amount of water possible to a beneficial use.

> What may be reasonable beneficial use where water is present in excess of all needs would not be a reasonable beneficial use in an area of great scarcity and need, and that what is beneficial use at one time may, because of changed conditions, become a waste of water at a later time (Trelease, 1957, pp. 1, 14, 16).

15.2.5 Manner in Which Rights May be Adversely Affected

Abandonment of a water right consists of more than a mere nonuse. There must be an attempt to abandon, coupled with some act of relinquishment by which the intent is carried out (Promontory Ranch Co. v. Argile, 28 U. 398, 79 P. 47, 1904; Hammond v. Johnson, 94 U. 20, 66 P.2d 894, 1937). Intent is the essential element. The burden of proof to show that water has been intentionally abandoned is upon the person who claims an abandonment (Wellsville East Field Irr. Co. v. Lindsay Land and Livestock Co., 104 U. 448, 137 P.2d 634, 1943; Dalton v. Wadley, 11 U.2d 84, 355 P.2d 69, 1960; Kirk v. Criddle, 12 U.2d 112, 363 P.2d 777, 1961). Evidence of temporary nonuse without further evidence showing the intention of the appropriator to abandon use of the water has been held inadequate to sustain a claim of abandonment (Promontory Ranch Co. v. Argile, loc. cit.).

Statutes provide that an appropriator who abandons or ceases to use water for a period of five years shall forfeit the water right. In such cases, the water reverts to the public unless the owner applies to the State Engineer and receives an extension of time within which to resume use of the water (U.C.A. §73-1-4).

The right to use water nonconsumptively lapsed when the owner failed to file with the Engineer a form stating that beneficial use had been resumed within the extension time to resume (Baugh v. Criddle, 431 P.2d 790).

Adverse Possession--

Since 1939, water rights cannot be acquired or lost by adverse possession.

Condemnation--

Utah allows for condemnation proceedings to obtain a right to use or enlarge an existing canal or ditch with payment of just compensation (U.C.A. §73-1-7). The constitutionality of this act was upheld when an individual sought to enlarge his neighbor's ditch in order to get irrigation water to his own land (Nash v. Clark, 27 U. 158, 75 P. 371, 1904).

Enforcement of Beneficial Use or Waste Concepts--

An appropriator is limited to the quantity of water specified in his permit that is being beneficially used and any unused water is subject to the forfeiture statute. Use of water must be both beneficial and relative to the reasonable requirements of subsequent appropriators (In re Water Rights of Escalante Valley Drainage Area, loc. cit.). The opinion in Big Cottonwood Tanner Ditch Co. v. Shurtliff (loc. cit.) held that the use must be reasonable in relation to the requirements of others, and also held that the court had the power to order improved method of diversion, conveyance and measurement of water so as to assure the greatest possible use of the resource. This would have to be done without limiting or modifying established water rights. The conflict in Utah law is again apparent. Changes are to be permitted if they would result in greater efficiency. However, no change is permitted if it will injure downstream users.

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[10] See Becker v. Marble Creek Irr. Co., 15 U. 225, 49 P.892, 1897).

It remains unclear whether failure to use water for a recognized beneficial purpose will result in automatic statutory forfeiture. No decision seems to exist as to whether failure to use water for a beneficial use will result in forfeiture. It appears that merely diverting the water would be enough to sustain the right. From these cases it seems that beneficial use is the basis, the measure and the limit and if the water is not being beneficially used, this would be equated with not using it, and therefore the water would be lost under the statutory forfeiture provision.

The object of the State Engineer's office is to maintain order and efficiency in the appropriation, distribution and conservation of water and to allow as much water to be beneficially used as possible (U.C.A. §73-3-8).

15.2.6 Legal Incentives and Disincentives for More Efficient Water Use Practices

Irrigation Return Flow--
A downstream senior appropriator is entitled to have the stream flow in a sufficient quantity to satisfy his appropriation. Thus, an upstream junior appropriator cannot use water if that use would deprive the downstream senior of his appropriated quantity. Return flow waters are those waters which return to a natural stream after use, and which may become subject to vested rights of downstream users.

The owner of surface irrigation rights is entitled to capture irrigation waste water before it leaves the water user's property, even though it may in the past have seeped or percolated through the soil to an enjoining land owner (Hutchins and Jensen, 1965, p. 104). This water is surface waste water. The landowner receiving such water establishes no permanent rights to it (Garns v. Rollins, 41 U. 260, 125 P. 867, 1912).[11] Once water used for irrigation has percolated into the soil, and where such waters if uninterrupted would return to a source to satisfy the right of the downstream appropriator, the land owner has no right to extract and reuse these waters (Rasmussen v. Moroni Irr. Co., 56 U. 140, 189 P. 572, 1920). The rationale for this policy seems to be that once waters are percolating, they have comingled with other ground waters and have lost their character as waters segregated from the bulk of the state's waters.

There is no obligation for an upper property owner to continue wasting water to supply the needs of lower property owners (Hutchins and Jensen, 1965, p. 80). In a case involving the rights of stockholders in an irrigation company to the use of waste and seepage waters produced by the irrigation of their lands, the court concluded that such waters could be captured by individual shareholders at the lower ends of their fields and reused (Smithfield West Bench Irr. Co. v. Union Central Life Insurance Co., 105 U. 468, 142 P.2d 866, 1943; 113 U. 356 195 P.2d 249, 1948).

This doctrine has obvious implications regarding irrigation return flow in light of the decision that an appropriator is entitled to stream conditions substantially as they were at the time of the appropriation. The problem could arise where someone would capture waters which are being lost and use them beneficially. This use could result in a reduction of stream conditions to a downstream appropriator which would constitute a cause of action. In a conflict between two individuals in this context, it would appear from prior appropriation doctrine the downstream senior user would have to prevail. Any other decision would mean that his rights were not only subject to time, amount and use, but also to the whims of upstream appropriators to salvage water which had been returned to the stream. Excessive fluctuations in stream flow caused by a junior appropriator will not be allowed if these fluctuations interfere with prior rights (Logan, Hyde Park and Smithfield Canal Co. v. Logan, 72 U. 221, 269 P. 776, 1928). This was the finding in Logan, Hyde Park and Smithfield Canal Co. v. Logan. It was noted in this opinion that an appropriator is entitled to have conditions maintained substantially as they were when the appropriation was made.

In Siguid City v. State (105 U. 218, 142 P.23 154, 1943), the court cited Adams v. Portage I.R.&P. Co. (72 P.23, 648), which held that the right to use water is a right to have water, in quantity and quality to satisfy an appropriation, at the point of diversion. Thus, water applied to the land returns to the stream through seepage, deep percolation or runoff minus that water which has evaporated into the atmosphere.

A water user is allowed to turn appropriated water into a natural watercourse or reservoir constructed across the stream and reclaim like quantity of water (less an amount allowed for evaporation and seepage) at some other point along the watercourse -- provided there is no deterioration in the quality and quantity of the water as a result of the exchange (U.C.A. §73-3-20).

An upstream user in Utah cannot change application methods so as to alter return flow patterns if such changes would interfere with vested downstream rights. As previously stated, an appropriator is entitled to have a stream flow pattern remain in susbsantially the same condition as it was when the appropriation was made (East Bench Irr. Co. v. Deseret Irr. Co., 2 U.2d 170, 271 P.2d 449, 1954). This doctrine is in conflict with the concept that an appropriator may salvage waters or may change a method of use to make better use of appropriated water.

In the area of water quality, the conflict between these two doctrines is crucial. It has been noted that there is a need for modernization and improvement of water systems to reduce losses on streams where the salt concentration is excessive (Interim Report on State Water Plan Staff Report No. 6, 1970). The argument in favor of proper water management is strengthened by a Utah Supreme Court decision in 1969. Though a ground water case, it is illustrative of the philosophy of the Utah court:

> ...inasmuch as such rights are so assured and protected only by the authority of the state, it is both logical and necessary that the rights of each individual should be to some degree subordinate to and correlated with reasonable conditions and limitations,

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[11] See also Roberts v. Gribble, 43 U. 411, 134 P. 1014, 1913; and Peterson v. Cache County Drainage Dist., 77 U. 256, 294 P. 289, 1930.

> thereon, which are established by the law for the general good. We believe that reflection will demonstrate that if this principal is applied with wisdom and restraint, and due consideration for the rights for all concerned, it will be seen that the result will much better serve the group (all users in society) by putting to beneficial use the greatest amount of water available, and ultimately, also for each individual therein, than would any ruthless insistence upon individual rights which simply result... (Wayman v. Murray City Corp., loc. cit.).

In Moyle v. Salt Lake City (111 U. 201, 176 P.2d 882), the court held that the plaintiff who had furnished potable water to the city and the city gave him lake water which was suitable for irrigation only, in such case the city was obligated to furnish Moyles with the same quality of water.

In Moyle, the court said:

> We are here confined to the narrow question of the right to recover for the loss of the use and occupation because of the condemnor having possession of the property while the suit was pending (Moyle v. Salt Lake City, Ibid.).

Salvaged and Developed Waters--
Salvaged waters are defined as waters which have been part of the system or source of supply but which have been lost to established users for application to a beneficial use. Such waters are considered salvaged if they have been recovered for use through individual efforts (Dewsnup and Jensen, 1973, p. 729). The party whose efforts resulted in the salvage of water is entitled to its use in Utah. The user whose water has been lost has no preferential right to salvage such water (Big Cottonwood Ditch Co. v. Shurtliff, loc. cit.). This was the finding in Salt Lake City v. Gardner (39 U. 30, 114 P. 147), in which the court held:

> ...while the original appropriator of water acquires such a right in his means or method of diverting water from a stream and that such means...may not be interfered with or changed to his prejudice by another water user, but if another water user who is entitled to the water can save the water and can put it to a beneficial use by changing the manner of diversion of the prior water user, he may do so ...and if he preserves and maintains all the rights of the prior user whose means or method of diversion is thus changed or affected.

This case held that a defendant could not use water saved by lining irrigation ditches.

Provisions for Transfer of Water Rights and Diversions--
Utah statutes provide a procedure--an exclusive procedure--for making changes in place of diversion, place of use and purpose of use of appropriated water (Anderson, 1975). Subject to the basic requirements, no such change may be made if it impairs an invested right without just compensation. The approval of the State Engineer is required and the procedure in obtaining this approval is the same as that pertaining to applications to appropriated water (U.C.A. §73-3-3). The right to make these changes subject always to the rule that noninjury to others accompany the change has long been recognized by the Utah Supreme Court.[12]

While a change that contemplates a more beneficial use of water which can be completed without impairing vested rights is fully consistent with the policy of establishing the most beneficial use of the state (American Fork Irr. Co. v. Luike, 121 U. 90, 239 P.2d 188, 1951), the right to make the change is a conditional one, not an absolute or vested right, especially if the public or any prior or subsequent appropriator is adversely affected, in which case the right to make the change will be withheld (United States v. Caldwell, 64 U. 490, 231 P. 434, 1924).

One who is seeking to make a change has the burden of making a prima facie case that the change will not be injurious to anyone (Tanner v. Humphreys, 87 U. 164, 48 P.2d 484, 1935). But, anyone who opposes such an application will fail if the evidence does not disclose that his right will not be impaired (Salt Lake City v. Boundary Springs Water Users Ass'n., 2 U.2d 141, 270 P.2d 453, 1954). These provisions governing changes in water diversion and use of applied water diverted from stream channels or other public sources of supply do not apply to deliveries of water by a mutual irrigation company to which stockholders in instances in which the users desire change or individual diversions from one point to another on the company's canal (Syrett v. Tropic & East Fork Irr. Co., 97 U. 56, 89 P.2d 474, 1939).

The nature of the State Engineer's function in acting upon applications to make changes in the exercise of appropriative rights, and that of the judicial review of the determinations, has been expounded by the Utah Supreme Court. The State Engineer as well as the courts is required to exercise discretion, determine facts after a hearing, and approve or reject applications accordingly. His duties are administrative in nature and purpose, and the courts' judgment on appeal covers only the issues subject to determination by him (United States v. District Court, 121 U. 1, 238 P.2d 1132, 1951). A judicial decision on appeal has the same affect on the rights of the applicants to proceed with their project as the same decision on the State Engineer would have had without an appeal.

However, there is an important distinction. The decision of the State Engineer is that of an administrative officer; it does not adjudicate the law or the facts in issue. On the other hand, a court decision on appeal goes beyond that and becomes the law of the case, it is res judicata between the parties, and is binding precedent on the law as in other decisions by the court on other matters (East Bench Irr. Co. v. Utah, 5 U.2d 235, 300 P.2d 603, 1956).

In Moyle, the court stated that:

> if the evidence shows that there is reason to believe that the proposed change can be made without impairing vested rights, the application should be approved. The owner

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[12] Some representative cases are: Spring Creek Irr. Co. v. Zollmeyer, 58 U. 90, 197 P. 737, 1921 (change of point of diversion); Hague v. Nephi (SP) Irr. Co., 16 U. 421, 52 P. 765, 1898 (same); Manning v. Fife, 17 U. 232 54 P.111, 1898 (purpose of use). For cases holding that a change will not be allowed because of resultant injury, see Tanner v. Provo Res. Co., 76 U. 335, 289 P. 151, 1930; and Piute Res. & Irr. Co. v. West Panguitch Irr. & Res. Co., 13 U.2d 6, 367 P.2d 855, 1962).

> of a water right has a vested right to the quality which he has beenficially used (Shurtleff v. Salt Lake City, 96 U. 21, 82 P.2d 561, 1938; Siguid City v. State, loc. cit.; Moyle v. Salt Lake City, loc. cit.).

> A change application cannot be rejected without a showing that vested rights will thereby be substantially impaired. While the applicant has the general burden of showing that no impairment of vested rights will result from the change, the person opposing such application must fail if the evidence does not disclose that his rights will be impaired.

In McNaughton v. Eaton (loc. cit.; Larson v. Seely, 120 U. 679, 238 P.2d 418, 1951); the Utah Supreme Court stated:

> the original appropriator, as long as he has possession and control thereof, may sell or transfer the right to the use of such waters to someone other than the reappropriator as long as he is in faith, and they are beneficially used, or he may recapture and use them for further beneficial use if he does so before they get beyond his property and control.

Once waters have been run through the canals of an appropriator and applied to land, water seeping or percolating back into the main channel loses its identity and becomes part of the natural flow (Salt Lake City v. Telluride Power Co., 82 U. 607, 17 P.2d 281, 1932). One case held that such water becomes the natural flow of whatever stream it may enter (Smithfield West Bench Irr. Co. v. Union Central Life Insurance Co., loc. cit.). If water used for irrigation becomes comingled with water of the water table, it loses its identity as irrigation water and is no longer owned by the irrigator (Stubbs v. Ercanback, 13 U.2d 45, 368, P.2d 461, 1962).

One weakness of this system is that the land cannot change a point of diversion, place or manner of use if such change interferes with the rights of downstream users (East Bench Irr. Co. v. Deseret Irr. Co., loc. cit.). This is a result of the doctrine that an appropriator is entitled to rely on stream conditions remaining substantially as they were when the appropriation was made. There appears to be a conflict in the law in that one doctrine says that an appropriator is entitled to rely on stream conditions remaining substantially as they were when the appropriation was made even if this means allowing water wasted through inefficient practices to return to the stream if such practices were in existence when the appropriation was initiated. Other doctrinal concepts seem to hold that if waste water is captured before it reaches the stream, that the downstream appropriator has no right to it. Clearly, these two concepts cannot be reconciled. The Utah court has attempted to distinguish cases where the original owner maintained control over these waters and did not allow them to return to the watercourse. This distinction is seemingly devoid of substance in that, by maintaining control of water so that it will not reach the stream, the appropriator may alter stream conditions for downstream users.

15.2.7 Waste Water Disposal and Drainage

The owner of higher ground is entitled to the natural drainage of water from such land onto the property of a lower landowner. Water placed upon the land by natural forces will be allowed to discharge upon the lands of others even to the latter's injury. This right, however, does not extend to seepage and drainage waters from irrigation collected by a property owner in artificial drains and discharged into canals or onto the property of others to his injury. While a prescriptive right may be acquired to maintain artificial drainage in this manner, the facts must show that all of the elements necessary to establish a right by adverse use are present. Since adverse use no longer exists in Utah, as a grounds of obtaining a water right, the drainage would have to continue for five years at which time the statutory forfeiture clause would perhaps be invoked.

In one case, for example, a lower landowner claimed a benefit stemming from the irrigation of the land owner's property through subirrigation by drainage water from upper lands. The Utah Supreme Court allowed the defendants drainage district to install drains in adjoining land even though it lowered the water table and destroyed the subirrigation of the lower property. The court stated that such drainage would be allowed regardless of whether the water originated from natural or artificial sources. It is also noted that an upper property owner is entitled to drain land to make the property usable absent malice or negligence in doing so (Peterson v. Cache County Drainage Dist., 77 U. 256, 294 P. 239, 1930; see also Roberts v. Gribble, 43 U. 411, 134 P. 1014, 1930). This is exemplary of the conflict that exists between the rights of surface owners and of ground water users. Whereas it has been held that the surface appropriator has the right to the stream as it existed at the time of the appropriation, a ground water user does not have the right with regard to ground water. Thus, in connection with the doctrine that an upper property owner is entitled to drain his land, absent negligence in doing so, would seem to indicate that an upper property owner who is contributing salts to the water and letting it drain to a lower landowner, thereby destroying the usability of the lower land, could be held to be using his water negligently, especially since he is permitted in Utah to install drains on his land to stop the subirrigation. This reasoning might be used in Utah to enforce future salinity standards.

Invasion of a person's interest in the private use and enjoyment of land as the result of an adjoining landowner's diversion of the flow of surface waters is actionable as a private nuisance (Sanford v. University of Utah, 26 U. 2d 285, 488 P.2d 741, 1971). Further, a landowner has the right to be free from receiving waters from his land if the waters do not find their way there naturally (Reeder v. Brigham City, 17 U.2d 398, 413 P.2d 300, 1966).

15.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

15.3.1 State Water Agencies

The Department of Natural Resources effectuates administrative coordination and cooperation among all natural resources boards and diversions. The State Engineer and the Division of Water Resources are within the Department (see Figures 1 and 2).

The State Engineer's duties encompass all matters involving the appropriation of water, including assisting the district court in the adjudication of water rights. This office is charged with the general administrative supervision of the waters of the state (U.C.A. §73-2-1). The State Engineer can appoint water commissioners to assure the proper

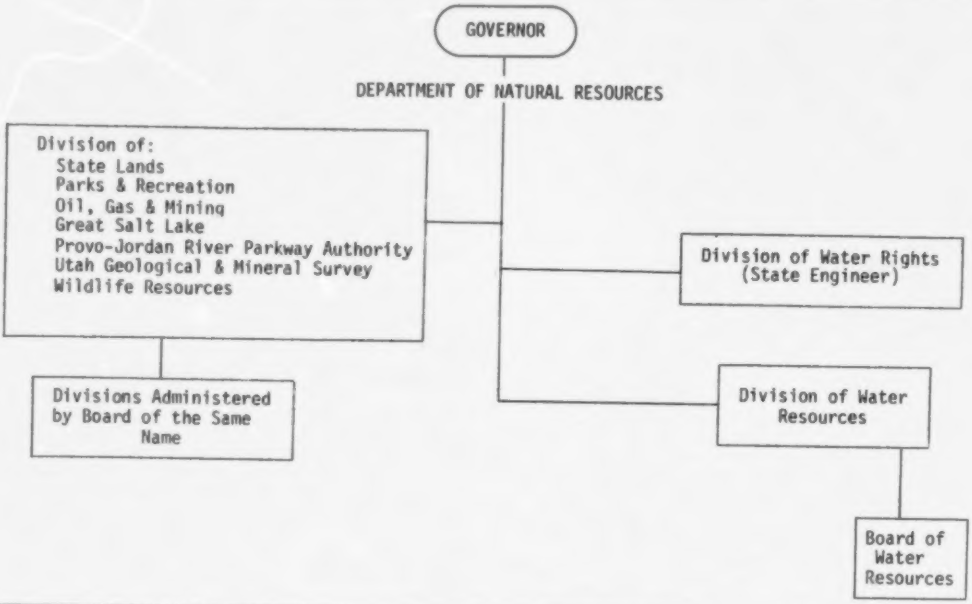
GOVERNOR
DEPARTMENT OF NATURAL RESOURCES
Division of:
State Lands
Parks & Recreation
Oil, Gas & Mining
Great Salt Lake
Provo-Jordan River Parkway Authority
Utah Geological & Mineral Survey
Wildlife Resources
Division of Water Rights (State Engineer)
Divisions Administered by Board of the Same Name
Division of Water Resources
Board of Water Resources

Figure 1: Organization of Utah Department of Natural Resources.

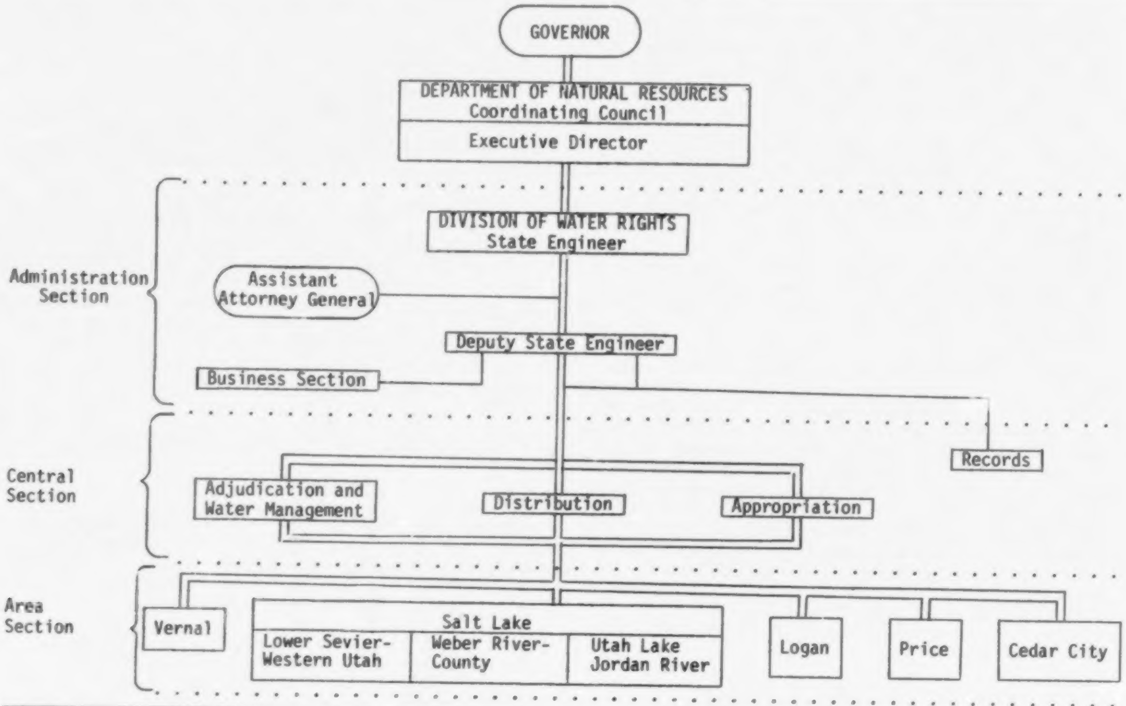
GOVERNOR
DEPARTMENT OF NATURAL RESOURCES
Coordinating Council
Executive Director
Administration Section
DIVISION OF WATER RIGHTS
State Engineer
Assistant Attorney General
Deputy State Engineer
Business Section
Records
Central Section
Adjudication and Water Management
Distribution
Appropriation
Area Section
Vernal
Salt Lake
Lower Sevier-Western Utah
Weber River-County
Utah Lake Jordan River
Logan
Price
Cedar City

Figure 2. Organization of Utah Department of Water Resources.

distribution of water among the various users. The commissioner is paid by the water users on a pro rata basis. The State Engineer also has supervision over the construction, repair, and operation of dams to insure safety and protect property (U.C.A. §73-5-1 to 73-5-14).

The Division of Water Resources operates under the Board of Water Resources which is a policymaking group appointed by the Governor. The Division administers a revolving fund program to finance water conservation and development projects.

15.3.2 Judicial Bodies

District courts are involved in the adjudication process in Utah. Utah does not have special water courts.

15.3.3 Water Users and Their Organizational Structure

Districts--
Irrigation districts may be organized in the interest of conserving and putting to beneficial use the public waters of the state and to prevent undue waste of such waters (U.C.A. §73-7-1).

Upon recommendation of the State Engineer, or 50 or a majority of landowners, the Governor will propose the organization of an irrigation district (U.C.A. §73-7-1).

A water conservation district is established by a petition and is filed with the Board of County Commissioners. It must be signed by the Governor or by 50 or a majority of the landholders (U.C.A. §73-7-2).

The Board of Directors allots available water to each 40-acre tract not above an amount set by the State Engineer (U.C.A. §73-7-27). The Board of Directors may also allocate waters in times of shortage (U.C.A. §73-7-27).

15.4 POLLUTION CONTROL

The Water Pollution Control Committee is responsible for water quality control and to accomplish this it is given broad powers to develop programs to prevent, control and abate new or existing water pollution (U.C.A. §73-14-4). The Committee may adopt standards of purity and quality for streams and may classify such streams consistent with the most reasonable present and future uses. Violation of a Committee order results in a hearing and in the issuance of an order to correct the violation.

The State Engineer is also given the power to prevent the pollution of waters in the state (U.C.A. §73-2-1). He can also reject applications to appropriate if the use would unreasonably affect public recreation or the natural stream environment (U.C.A. §73-3-8).

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APPENDIX A REPORT 16

WASHINGTON

16.1 HISTORICAL BACKGROUND

Water law in Washington is characterized by both riparian and appropriation rights. Initially, the riparian doctrine was adopted as the basic water law of the state, although rights to water flowing through public land could be acquired by diversion and use. Though the water law in Washington has undergone changes through the years, recent developments in Washington indicate an awareness of both the emerging environmental ethic and the need to develop the waters of the state. From 1965 to 1974, however, the irrigated acreage increased from 1,279,745 to 1,569,000 ("Irrigation Survey, 1974," Irrigation Journal, Vol. 24, No. 6, Nov./Dec., 1974).

The unusual geographic characteristics of Washington, a relatively arid eastern section contrasted with a moist, mild western section, led to adjustments in the law to accommodate irrigation projects in the eastern part of the state. In 1917, Washington adopted the appropriation doctrine as the exclusive method of acquiring the right to the use of surplus surface waters of the state (W.R.C. §90.03.010).

The beneficial use concept manifested itself in a number of early court decisions involving riparian rights. One such decision indicated that riparian owners were to be protected when future appropriative issues were considered. This was done by requiring persons who desired to condemn water to take the needs of riparians into account for the present and for a reasonable time in the future (State ex rel Liberty Lake Irri. Co. v. Superior Court, 47 Wash. 310, 91 P. 968, 1907). Some confusion arose over the phrase "reasonable time." Later cases held that the riparians who desired to make use of some water at a future time could not prevent a person from making an immediate use of the water (State el rel South Fork v. Superior Court, 102 Wash. 460, 173 P. 192, 1918).

The 1967 Water Right Claims Act corrected this problem. This Act required that riparian uses be adjudicated with appropriation rights and have a priority assigned them. It ended the possibility that, in Washington, a consumptive use could be established by means of a riparian right. Therefore, unless a water right has been adjudicated, assigned a priority and beneficially used, a riparian owner has no standing to object to the issuance of a permit for surplus water in a stream (Brown v. Chase, 22 Wash. 243, 60 P. 403, 1900). This assumes "surplus water" to mean water in excess of base flows. Presumably a citizen has standing to sue if base flows are not maintained in streams.

The situation is different when considering riparian rights on lakes. The same rules apply with respect to consumptive use in that the right must be adjudicated and assigned a priority date. However, if the right is nonconsumptive (bathing or boating), the riparian owner has standing to complain if an unreasonable use leaves what was formerly a lake in the condition of a mud flat (Geddis v. Parrish, 1 Wash. 587, 21 P. 314, 1889). This right of nonconsumptive riparians right to complain is not as clearly established regarding owners on a stream.

The reasonable use concept of riparian rights governs in Washington (Hunter Land Co. v. Langenour, 140 Wash. 558, 250 P. 41, 1926). At one time it was held that riparians have coequal rights to the use of the water regardless of the time they came onto the stream (Hunter Land Co. v. Langenour, 140 Wash. 558, 250 P. 41, 1926). This is no longer relevant since riparian rights are now assigned priorities along with appropriative rights.

16.2 SUBSTANTIVE LAW

16.2.1 Property Rights in Water

Water flowing in a natural stream is not subject to private ownership. Any private rights which do attach are strictly usufructuary rights to take the water from the stream and apply it to a beneficial use (Rigney v. Tacoma Light and Water Co., 9 Wash. 576, 38 P. 147, 1894). Private rights of ownership do not attach to the corpus of the water as long as it remains in the stream (Rigney v. Tacoma Light and Water Co., 9 Wash. 576, 38 P. 147, 1894). Waters of a non-navigable stream are considered to be part of the soil over which they flow (Colburn v. Winchell, 97 Wash. 27, 165 P. 1078, 1917).

Once the water has been diverted and conveyed elsewhere, it becomes personal property (Dunsmuir v. Port Angeles Gas, Water, Electric Light and Power Co., 24 Wash. 104, 63 P. 1095, 1901; Madison V. McNeal, 171 Wash. 669, 19 P.2d 97, 1933). In Thompson v. Short (6 Wash. 2d 71, 106, P.2d 720), the Washington Supreme Court held that a claimed right to the flow of water whether in its natural state or in an artificial channel is appurtenant to the land upon which it is used and is considered as real property. The use of water for irrigation, mining and manufacturing purposes is a public purpose (Wash. Const. Art. XXI, §1).

A right is a power, privilege, faculty, or demand, inherent in one person and incident upon another--a power of free action (Black's Law Dictionary, 4th Edition). The right to use water is a usufructuary right, i.e., the right of enjoying a thing, the property of which is vested in another. Coupled with every right is a corresponding duty. Used in a context relating to water law, the duty is to use the water beneficially or without waste. Therefore, the term usufructuary must be limited by defining one's corresponding duty to the water. The word "duty" is a correlative of a right, whenever there exists a corresponding duty upon some other person or upon all persons generally (Black's Law Dictionary, 4th Edition).

16.2.2 Acquisition of Rights

Riparian Rights--
Riparian rights were acquired with the acquisition of riparian land. The water right which came with the land existed only for the quantity of water being beneficially used, or which could be placed in beneficial use within a reasonable time (Brown v. Chase, loc. cit.; State v. American Fruit Growers, 135 Wash. 156, 237 P. 498, 1925). Beneficial use limitation was imposed to define the extent of the right after the right has been acquired. Since 1967 there has been no recognition of consumptive riparian rights accompanying the purchase of land. Beneficial use is a condition precedent to the continued ownership of a right to divert water (Water Rights Claims

Registration Act, §90.14.020). In Proctor v. Sim (134 Wash. 606, 236 P. 114, 1925), the Washington Supreme Court ruled that riparian rights do not exist in navigable waters because the state owns the bed of the stream, therefore, a private landowner does not adjoin the water.

Appropriation Rights--

An appropriative right is a right to divert and make use of water (Madison v. McNeal, loc. cit.). It is a usufructuary right (Ibid.). The quantity of water beneficially used is the basis and limit of the right, not the water which is diverted from the stream (Miller v. Wheeler, 54 Wash. 429, 103 P. 641, 1910; Ortel v. Stone, 119 Wash. 500, 205 P. 1055, 1922). Washington law provides that prior appropriators "first in time" are "first in right" (W.R.C. §90.03.010). The first appropriator is entitled to that quantity of water first appropriated to the exclusion of subsequent claimants. When a valid appropriation is made, the right becomes vested (Lawrence v. Southard, 192 Wash. 287, 73 P. 2d 722, 1937). The appropriation system is the exclusive method of acquiring rights to the use of surplus water. This method of appropriating water rights was provided by the water code of 1917 (W.R.C. §90.03.010 to 91.03.480).

To initiate a water right under the code, an application for a permit must be filed with the Director of the Department of Ecology (W.R.C. §90.03.250 (Water Code--1917 Act, §90.03.010 to .480)). For an application to be approved, the Director must determine if there is surplus water in the source, and that the proposed use will not conflict with existing rights nor prove detrimental to the public interest (W.R.C. §90.03.290). The project works, which must be completed with due diligence and within the time prescribed by the Director (W.R.C. §90.02.320),[1] when completed, and the water when placed to beneficial use result in a certificate being issued by the Director (W.R.C. §90.03.330). This certificate is recognition of the perfected water right.

Ground Water--

A ground water code provides that those statutes governing the appropriation and beneficial use of surface waters are applicable to ground water (W.R.C. §90.44.020). Ground water is defined as "all waters that exist beneath the land surface or beneath the bed of any stream, lake, or reservoir or other body of surface water, whatever may be the geological formation or structure in which the water stands or flows, percolates or otherwise moves" (W.R.C. §90.44.035). This definition includes ground water artificially made available in a ground water storage basin by irrigation waste water (W.R.C. §90.44.035 and 90.44.040). The significance of including ground water under the rules applicable to surface water is that applications for a permit to appropriate ground water must be made in a manner similar to applications for permits to appropriate surface water. This includes some irrigation waste water. The earlier rule with respect to percolating waters was that it was subject to reasonable use by an overlying landowner (Evans v. Seattle, 182 Wash. 450, 47 P.2d 984, 1935).

In case of a conflict between a ground water appropriator and a surface water appropriator, the owner of the surface water right has superiority over any subsequent right granted in the ground water (W.R.C. §90.44.030). The effect of the ground water code on earlier rights, prior to the passage of the code, is unclear. It is not clear what effect the code has on an overlying landowner who was making use of percolating waters prior to the passage of the code. The Water Rights Registration Act (W.R.C. §90.14.010) appears to have some effect on the claims of ground water users to the extent that a right not claimed would be lost.

The procedure for processing a ground water application is the same as that governing surface waters (W.R.C. §90.44.060). Permits for ground water may not be granted beyond the capacity of a ground water basin. This determination is to take into account rasonable or feasible pumping rates (in new developments), or a reduction of pressure (as with artesian developments). Permits may not be approved if the Director determines that a new permit would impair an existing right (W.R.C. §90.44.070). Once the application is approved, the works constructed, and the the water placed to beneficial use, the certificate evidencing a perfected right is issued by the Director (W.R.C. §90.44.080).

The ground water code makes provision for the recording of any right vested prior to the enactment of the law. Any person who applied ground water to beneficial use prior to or within three years after the effective date of the act is entitled to such a certificate evidencing the ground water right. This certificate has the same effect as a permit granted under the provisions of the ground water code. It has priority as of the date of the earliest beneficial use of water (W.R.C. §90.44.090).

Prescriptive Water Rights--

Riparian rights are affected by the doctrine of adverse use as they can be lost under the principles of this doctrine. A person claiming the rights of another by adverse possession has to prove open and notorious exclusive adverse use for a continuous period of ten years (Smith v. Nechanicky, 123 Wash. 8, 211 P. 880, 1923). The burden of demonstrating adverse use falls with the person asserting it and must be clear and convincing (In re Ahtanum Creek, 139 Wash. 84, 245 P. 758, 1926); Rogers v. Cation, 9 Wash. 2d 369, 115 P.2d 702).

With regard to appropriative rights, the Washington legislature has provided that no rights to the use of surface or ground water affecting either appropriated or unappropriated water may be acquired by prescriptive or adverse use (W.R.C. §90.14.220).

Preferences--

Use of water for natural or domestic purposes appears to be a preferred use. Domestic uses include water for both household purposes and for domestic animals (Hunter Land Co. v. Langenour, loc. cit.). Water may be used for domestic purposes to the point of drying up the supply (Nielson v. Sponer, 46 Wash. 14 89 P. 155, 1907). It is of interest to note that water for municipal purposes is not included in the definition of a riparian right (Cartier Van Diesel v. Holland-Horr Mill Co., 91 Wash. 239, 157 P. 687, 1916).

16.2.3 Adjudicating Water Rights

Washington has a statutory procedure which provides for a comprehensive adjudication of rights among users of water from a common source. This procedure is initiated by a petition of one or more users.

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[1] The facts in each case determine what due diligence is. See In re Alpowa Creek, 129 Wash. 9, 224 P.29, 1924).

This petition is filed with the Director of the Department of Ecology. Upon filing, the Director is to determine whether the public interest will be best served by such a determination. If such a determination is made, a statement of the facts and a map of the sources being investigated are filed in the Superior Court of the county in which the water source is situated or, in case the water is situated in more than one county, then the supervisor will determine which county is more convenient to all. The statement is to contain the names of all persons known to claim a right from the source involved. It also contains a brief statement of the facts necessitating such a determination (W.R.C. §90.03.110).

Once the statement is filed, a summons is issued directing all water users to file a statement setting forth the nature and extent of their rights (W.R.C. §90.03.120). If the owner or claimant of water is unknown, service is made via publication (W.R.C. §90.03.130, 90.03.170).[2]

Once the service of summons is completed, testimony is heard by the Director regarding the claims of the individual users (W.R.C. §90.03.160). Upon completion of this phase of the investigation, a transcript of the testimony is prepared along with the Director's report and all exhibits which had been received as evidence. A time is then set by the Superior Court for a hearing on the Director's report. All water users are notified of this time (W.R.C. §90.03.190). If no exceptions are filed, the court enters a decree determining the rights according to the evidence and the report of the Director. If, however, exceptions are filed, the court may, in its discretion, take further evidence. The right of appeal from the Superior Court decision is to the Supreme Court of Appeals (W.R.C. §90.03.200). Upon final determination, the Director issues a certificate to each person entitled to the use of the water. This certificate describes the nature and extent of the water rights determined (W.R.C. §90.03.240). After proper legal service, failure of a person to appear and submit proof of his claim results in an estoppel barring that person from asserting any right to the use of water from the source adjudicated (W.R.C. §90.03.220).

In addition to this statutory procedure, a person aggrieved by any order, decision or determination of the Director or any water master may, after exhausting administrative remedies, appeal the decision to the superior court in the county where the use is situated. The appeal must be initiated, however, within twenty days of the order, or determination. The burden is on the user to prove that the decision was incorrect. The statute provides that the decision of the Director or water master is prima facie correct.

The Water Right Claims Registration Act (W.R.C. §90.14.010)--
Under the Washington water code, it was difficult to quantify and protect riparian rights. This problem arose from a directive in the code providing "that none of this provision shall lessen, enlarge, or modify the existing rights of any riparian owner or any existing right acquired by appropriation or otherwise" (W.R.C. §90.03.010). The Water Rights Claims Registration Act is an attempt to protect early appropriation rights (established by custom and use), riparian rights, and all rights difficult to evaluate and define in light of unrecorded rights. Recordation of rights would help determine the amount of surplus water available for new appropriations. The Water Rights Claims Registration Act was passed in 1969 to "provide adequate records for the efficient administration of the state waters, and to cause a return to the state of any water rights which are no longer exercised by putting said water to beneficial use" (W.R.C. §90.14.010).

All persons claiming a right to withdraw and beneficially use water from either a surface or ground water source were required to file a claim with the Department of Ecology prior to June 30, 1974. This registration requirement did not apply to any water right based upon a previously issued permit or certificate (W.R.C. §90.14.041). Under the law, the right claimed had to be described in detail (W.R.C. §90.14.051 and 90.14.061). Failure to file a claim under this Act constituted a conclusive presumption of a waiver of any right, title or interest in the water (W.R.C. §90.14.071). It is important to note that the claim filed did not constitute an adjudication of the right to use water; it was merely a registration. The claim was, however, admissible in the general adjudication procedure as prima facie evidence of a period of use and the quantity of water diverted. This was subject to the condition that the claim was evidence only if the quantities of water in use and the time of use when a controversy is mooted are substantially in accord with the times of use and quantity of water claimed in the statement of claim (W.R.C. §90.14.081). Providing notice to all potential claimants was a problem. The state, however, provides for notice by publication, use of radio and television broadcasting, posting a notice in each county courthouse in the state, and by mail from the county treasurer's office of each county (W.R.C. §90.14.101). In addition, the Department of Ecology was required to establish a water rights claims registry for claims filed (W.R.C. §90.14.111).

The practical effect of this legislation has not been impressive. All persons desiring to preserve a use or a water source have registered claims. Some of these claims have no validity or are inflated. The result is that many streams and rivers are overappropriated on paper. The statute is only a registration of claims and not an adjudication. Little has been accomplished because the conflicting claims have yet to be property evaluated.

16.2.4 Conditions of Use

Beneficial Use--
The Water Code and Ground Water Code demonstrate the legislature's intent, that the state's water resources are to be put to their most beneficial use, and a record is to be made of these usages so as to assure a continuing beneficial use (RCWA 90.03.010 et. seq., 90.14.010 et. seq., 90.44.010 et. seq.; In re Stranger Creek and Tributaries in Stevens County, 77 Wash. 2d 649, 466 P.2d 508, 1970). The phrase "beneficial use" is not susceptible to easy definition. However, a statute (W.R.C. §90.03.040) provides that all persons shall be provided that quantity of water which is reasonably necessary for the irrigation of his land, and that this irrigation is to be accomplished by the most economical method of artificial irrigation to the land in question, according to the usual methods of artificial irrigation employed in the vicinity where the land is situated. In all

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[2] Service by publication involves publication in a newspaper of general circulation printed and published at the county seat of each county in which any portion of the water is situated, once a week for 6 consecutive weeks.

cases, the court is the determining body as to what is the most economical method of irrigation (*Ibid.*).

Though both riparian and appropriative rights are recognized, they are subject to many of the same constraints. A discussion of each is appropriate. To begin with, beneficial use has been used to define the extent of appropriation rights, and also riparian rights which are used to divert and use water from a stream (W.R.C. §90.03.010; see also *In re Stranger Creek*, loc. cit.). This beneficial use limitation does not apply to riparian uses which do not remove water from the stream. These uses would include boating, swimming, and other recreational uses in the stream (W.R.C. §90.14.020).

In *Haberman v. Sander* (116 Wash. 703, 7 P.3d 567, 1932), the court stated that, in arid regions, water should be put to its most important and beneficial use. The only consideration required by the state for use of water for irrigation or agricultural purposes is the beneficial application of water upon the land for the production of crops (*Lawrence v. Switzer*, 21 Mont. 523, 55 P. 32, 1898).

16.2.5 Manner in Which Rights May Be Adversely Affected

Relinquishment--
Legislation was passed in 1967 providing for the relinquishment of water rights. The statute applies to both riparian and appropriation rights, and to surface water and ground water (W.R.C. §90.14.130 to 90.14.210, 1974 Supp.). The statute provides that any person entitled to divert or withdraw waters of the state through any appropriation, or by custom, or general adjudication, who abandons the same, or who voluntarily fails to use water without sufficient cause for five successive years after the date of act (1967), relinquishes the right or the portion of the right not used. A relinquished water right reverts to the public and is available for reappropriation (W.R.C. §90.14.160, 90.14.180 and 90.14.210). The person whose right is threatened is to be notified by the Director to show why the right or a portion of it should not be relinquished (W.R.C. §90.14.130).

The relevant statute provides a list of sufficient causes which will prevent a loss of the right in the case of nonuse. Sufficient cause includes drought, service in the armed forces, pendency of a suit of a claim on the right for future development (W.R.C. §90.14.140). A decision of the Director is subject to judicial review. However, the decision of the Director in finding that a right has been relinquished is deemed by statute to be prima facie correct (W.R.C. §90.14.190). The burden is on the user to prove the decision incorrect or arbitrary.

Abandonment--
As noted, relinquishment results from the nonuse of water without sufficient cause. Abandonment requires an intent to voluntarily give up the right as well as nonuse of the water. It would be irrelevant in an action involving nonuse of water for five years. (see Appendix 1). It could be used in a case where nonuse of water has occurred and the user apparently intends to give it up. Rather than let the water go to waste, the state or a private person by suit could attempt to declare the water right abandoned so as to establish the right to use it. Both the elements of a nonuse and intent, however, are necessary (*Sander v. Bull*, 76 Wash. 1, 135 P. 489, 1913).

Adverse Possession--
No appropriative rights to use surface or ground water may be lost by adverse possession (W.R.C. §90.14.220).

Condemnation--
Beneficial use of water is a public use of water in Washington. The result is that any person may exercise the power of eminent domain to condemn an inferior use for a superior use. The determination is left to the district court to decide which is of greater public benefit. The one exception to this is that no one may acquire irrigation water by condemnation once such an action could deprive any person of the quantity of water which would be necessary to fully irrigate lands using methods common to the area (W.R.C. §90.03.040). The point is of importance in that it appears that the statute does not require a user to use the best, most efficient or most productive irrigation method. Washington recognizes power production as being inferior to irrigation use if the water is to be solely used for power production, but it recognizes also that domestic stock watering uses are superior to irrigation. A riparian owner's right to water for future irrigation purposes could be condemned for failure of the owner to bring additional land under cultivation within a reasonable period of time. Since 1967, a riparian owner will lose his water right if it has not been registered. The statute in question (W.R.C., Titles 89-91) provides that, even if it is registered, it may be condemned for failure to bring additional land under cultivation within a reasonable period of time.

Patentees of land which abutted a nonnavigable lake acquired title to the center of the lake. Riparian rights attached, became appurtenant as incidents of ownership, and became vested property rights which were entitled to protection of Washington Constitution, Article I, Section 16. Section 16 protects against the taking or damaging of property for public or private use unless just compensation is paid (*Petition of Clinton Water District of Island County*, 218 P. 2d 309, 36 Wash. 2d 284).

Enforcement of Beneficial Use or Waste Concepts--
An appropriator is limited to that quantity of water specified in his permit that is being beneficially used and any unused water is subject to the relinquishment statute (W.R.C. §90.03.330 and 90.44.090). No appropriative right is valid unless it is pursuant to a beneficial use. It is the intent of the legislature that the state's water resources should be put to their most beneficial use (RCWA 90.03.010 et. seq., 90.14.010 et. seq., 90.44.010 et. seq.).

Statutes in Washington provide that all persons shall be provided that quantity of water which is reasonably necessary for the irrigation of his land and this irrigation is to be accomplished in the most economical method of artificial irrigation (W.R.C. §90.03.040).

16.2.6 Legal Incentives and Disincentives For More Efficient Water Use Practices

Irrigation Return Flow--
A downstream senior appropriator is entitled to have the stream flow in a sufficient quantity to satisfy his appropriation. Thus, an upstream junior appropriator cannot use water if that use would deprive the downstream senior of the appropriated quantity. Thus, return flows are those waters which return to a natural stream after use, and which may become subject to vested rights of downstream users.

A duty exists to provide for the proper outflow of water to a natural watercourse (*Wilber Development Corp. v. Les Rowland Construction Inc.*, 83 Wash. 2d 871, 523 P. 2d 186). The policy of integrating environmental protection with a water resources management program is illustrated by two recent statutes. The first is the Water Resources Act of 1971 which sets forth legislative guidelines for future water resource management. This Act contains the instruction that securing maximum net benefits for the people of Washington will constitute total benefits less total costs, including opportunities lost (W.R.C. §90.54.020(2)). Among the concepts found in the Water Resources Act (W.R.C. §90.54, 1971), which are unusual in an appropriation state, is the policy that peruvial rivers and streams must retain those base flows necessary to provide for the preservation of wildlife, fish, scenic, aesthetic, and other environmental values and to maintain navigational values. Along with this is directive that lakes and ponds should be retained substantially in their natural condition (W.R.C. §90.54.020(3)(a)).

The policy regarding base flows is a concept not found in most of the western states utilizing an appropriation doctrine. It is in conflict with the traditional appropriation policy that the state will grant a permit to appropriate water so long as there is unappropriated water available. The Washington policy is that minimum flows shall be maintained regardless of whether there is demand for water. This Act, however, has not had dramatic results. One individual familiar with the situation estimates that only one river (which has an abundance of water) has had a minimum flow declared. It would appear that no user has been inconvenienced by this statute (Personal interview with Ralph Johnson, College of Law, University of Washington, Seattle, Washington, March 20, 1975).

Consistent with recognition of the need for minimum base flows is the recognition that the waters of the state are of interest outside the state. Such interests represent a desire to move water from the state. This is seen by the residents of Washington as contrary to the public interest (W.R.C. §90.54.010). In particular, the states of the Colorado River Basin have shown a desire to divert a portion of the flow of the Columbia River into the Colorado River Basin ("A Summary Digest of State Water Laws, 1971).

Salvaged and Developed Waters--

In *Shotwell v. Dodge* (8 Wash. 337, 36 P. 254, 1894), the Washington Supreme Court held that when loss becomes extreme due to the porous character of the soil, the irrigetor must take reasonable means to lessen the amount of loss. Any water which is saved by his efforts should inure to the one who has expended time and effort in this conservationist effort.

Provisions for Transfer of Water Rights and Diversions--

Water which has been applied to a beneficial use is appurtenant to the land, or the place where the use was made, in Washington. A change may be in the point of diversion, place or use or nature of use of water if the change is made without injury to other users (W.R.C. §90.03.380). The owner of the right must file an application to transfer with the Department of Ecology and notice must be given by publication prior to the transfer. A certificate permitting the transfer is issued by the Secretary of the Department of Ecology if a finding is made that the transfer can be accomplished without injuring other rights (*Ibid*.). Such transfers may also apply to seasonal or temporary changes and the rotation of the available water, so long as the changes are accomplished without detriment to existing rights (*Ibid*.).

Any person objecting to a proposed change has to prove that the change would prejudice or impair existing rights. For example, in one situation, a change was denied when it was proved that change reduced the subirrigation and the flow of the stream on adjacent lands, even though a temporary permit had been issued (*Haberman v. Sander*, 166 Wash. 453, 7 P.2d 563, 1932). A water right is an interest in realty appurtenant to the land and passes to the grantee when the land is conveyed (*Drake v. Smith*, 54 Wash. 2d 57, 337, P.2d 1059).

Assignment--

Washington statute provides that a water right (or an application for a water right) may be assigned to another provided that (in the case of an application for water right) the prior written consent of the supervisor of water resources of the Department of Ecology be obtained. An assignment is subject to the conditions of the original appropriation permit. The assignment must be recorded at the state Department of Ecology office (W.R.C. §90.03.310). This assignment is subject to the general rule that injury to the use may not occur by such assignment (W.R.C. §90.03.380).

The noninjury limitation on changes of a use, the place of use or point of diversion limits any transfer potential when existing rights are partially or wholly determined by return flows. The Department of Ecology does not require an applicant for a transfer to prove a lack of injury as a result of the transfer. The burden of proving that injury would occur rests with the Department of Ecology in its review of the application. However, where an objection is filed against a transfer, the Department of Ecology apparently has some discretion as to whom will bear the burden of proof. This is based upon conjecture, and on the language in the case of Brown against Chase (*Brown v. Chase*, loc. cit.).[3]

State law permits seasonable or temporary changes in the place of use or point of diversion with, again, the provisal that no harm results to existing rights. Also, users are permitted to pool their collective rights and rotate their use subject to the noninjury constraint and administrative approval (W.R.C. §90.03.390). How the noninjury constraint is implemented is questionable since any water master would be under the handicap of not knowing whether a user has a valid right or not since there are no recordations of the water rights in Washington, only a recordation of those who claim them.

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[3] Providing that where application is made for a permit to appropriate waters on nonriparian lands, if the hydraulic engineer (analogous to the present Department of Ecology) finds an abundant supply of water, he may require the riparian protestant to show that the proposed appropriation will hurt him, but if the hydraulic engineer finds that the water supply is limited, he may require the applicant to show that his proposed appropriation will not injure existing rights. Of course, under either method, the supervising authority must be in the field to know what demands the water supply is capable of meeting.

It is clear that there are few opportunities for the transfer of water rights to higher valued irrigation uses. An example of the difficulties that may arise from a transfer would be the proposed exchange of 6,000 acre-feet of water from the Kittitas Reclamation District to the City of Ellensburg, Washington. The exchange was published in the local newspaper of Ellensburg once a week for two consecutive weeks (see Ellensburg Daily Record, Feb. 7, 1968, p. 8, for the notice). The proposed alteration was to change the point of diversion from its present point to approximately 36 miles above the original point of diversion. An objection was filed by the Field Solicitor acting on behalf of the United States, along with some of the downstream districts. These objections were filed on the basis that the proposed transfer would change the character of the water use from nonconsumptive to consumptive use. Downstream users felt that there was a possibility of injury before the objection was filed. Four years later, after the facts were known, the transfer was permitted. The point being that the districts often cannot get along as well as might be hoped, and this type of judicial harrassment with full knowledge that objections will necessarily result in protracted negotiations thereby causing a loss of productivity, is not the most desirable activity one could imagine.

16.2.7 Waste Water Disposal and Drainage

Disposal of Waste--
Diffused surface water occurs from rain and melting snow which is diffused over the surface of the earth and which forms no part of a watercourse (King County v. Boeing Co., 62 Wash. 2d 545, 384 P.2d 122, 1936). These waters are not subject to appropriation while in their diffused state, but can be used by the owner of property on which they arise (Thorpe v. Spokane, 78 Wash. 488, 139 P. 221, 1914).

Flood waters not within the banks of a stream are surface waters and a common enemy against which each landowner is entitled to protect himself (DeRuwe v. Morrison, 28 Wash. 2d 797, 184 P.2d 273). A landowner cannot collect and artificially discharge diffused surface water upon adjoining lands in greater quantities than the natural flow (Cass v. Dicks, 14 Wash. 75, 44 P. 113, 1896).

Rule governing proportionate liability where two or more persons contribute to the maintenance of a nuisance was inapplicable in an action for damage to crops which had occurred from the seepage from an irrigation canal (Robillard v. Selah--Moxee Irr. Dist., 54 Wash. 2d 582, 343 P.2d, 565).

16.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

16.3.1 State Water Agencies

The general administrative supervision of Washington's water resources is vested in the Department of Ecology. The general responsibility of the Department, according to the statute, is:

> To establish a single state agency with the authority to manage and develop our air and water resources in an orderly, efficient and effective manner, and to carry out a coordinated program of pollution control involving these and related land sources (W.R.S., §43.21 A.020).

The administrative head of the Department, the Director, is appointed by the Governor. The Director is responsible for carrying out the powers and duties of the Department (W.R.S. §43.21 A.050). There is, however, an Ecological Commission created (W.R.S. §43.21 A.170) to advise the Director on matters relating to: (1) the position taken by the state before any interstate body or agency on matters affecting the quality of the environment of the state; (2) the development of the state policies with regard to any comprehensive environmental quality plan; (3) procedures for considering and granting variances; (4) proposed legislation relating to the Department; and (5) any other matter related to the Department and requested by the Director (W.R.S. §43.21 A.190). The Department is to develop and implement a comprehensive state water resources program (W.R.C. §90.54.040). It has the power to carry out the policies of the Department including reserving water, setting it aside for future beneficial use, or withdrawing it from appropriation while data is developed for sound decision-making (W.R.C. §90.54.050).

To aid in the distribution of water rights, the Director may appoint water masters among those having rights to the same source. These are state employees and are responsible to the Director (W.R.C. §90.03.060). To facilitate the distribution of water rights, the Director may designate water districts and may adjust the boundaries of each district as conditions dictate (W.R.C. §90.03.060). The primary responsibilities of the water master are to divide a water supply among the users according to their respective rights and priorities and to prevent a use of water in excess of the amount to which a user is legally entitled (W.R.C. §90.03.070).

Water users are required to install and maintain adequate measuring devices and control facilities (W.R.C. §90.03.360). It is unlawful to interfere with the regulation of these works or with storage or water carriage facilities (W.R.C. §90.03.410 and 90.03.420).

16.3.2 Judicial Bodies

Washington law does not provide for special water courts.

16.3.3 Water Users and Their Organizational Structure

Districts--
Irrigation districts organized under Section 87.03.010 to 87.03.915 are corporations with a public purpose; and while subdivisions of the state, they differ from counties and like political units in that they function for profit and are formed for a business not a governmental purpose.

A water district cannot appropriate water from a nonnavigable lake for domestic use as a matter of right. They must secure a permit and the state could impose conditions on that permit (Petition of Clinton Water District of Island County, 218 P.2d 309, 36 Wash. 2d 284).

> An irrigation district may be organized or maintained for any or all of the following purposes:
> (1) The construction or purchase of works, or parts of same, for the irrigation of lands within the operation of the district.
> (2) The reconstruction, repair, or improvement of existing irrigation works.
> (3) The operation or maintenance of existing irrigation works.

> (4) The construction, reconstruction, repair or maintenance of a system for diverting conduits from a natural source of water supply to the point of individual distribution for irrigation purposes.
> (5) The execution and performance of any contract authorized by law with any department of the Federal Government or of the state of Washington, for reclamation and irrigation purposes.
> (6) The performance of all things necessary to enable the district to exercise the powers herein granted (W.R.C. §07-03.750).

There is generally a contractual provision limiting the use to the irrigation of those lands which are classified as "irrigable" within the boundaries of the district. Nonirrigable lands are those lands of a district which cannot be furnished with sufficient water for successful irrigation (W.R.C. §87.03.750). Thus, irrigable lands are those lands within a district which can be furnished with a sufficient amount of water for successful irrigation. The contract terms usually limit the place of use to the lands classified as "irrigable," and this is defined very narrowly. For example, for those the district is limited to a maximum of 72,000 irrigable acres, and water may be delivered only to lands which have been classified as irrigable with the approval of the Secretary of the Interior (personal interview with Henry Vancik, Sunnyside, Washington, Roza Irrigation District, March 24, 1975). There are, however, situations when a contract provides for an expandible area of use on the condition that the amount of water delivered to the district is more than can be beneficially used on the irrigable lands of the district. If this condition is met, then the district may extend its boundaries for purposes of including greater areas of irrigable lands in order that the water provided can be used to its maximum efficiency (Land Development and Water Use, 1972)

District water supply is made available to users on a uniform basic allotment, usually three acre-feet per irrigable acre. Additional water may be purchased on an unlimited basis for a multiple of the basic charge. There are exceptions to this general policy; some of the districts' board of directors are empowered to determine the amount of water to be delivered to each acre, contingent upon payment of the basic charge, while some directors are empowered to set minimum quantities of water available to land, but are limited to the maximum amount which may be delivered there without charging an additional rate for any excess water. Still others allocate water on the basis of ownership of shares in the district, which represent shares in the water supply.

Regardless of the method of allocation, the board of directors is under an obligation to operate their system (irrigation) with the goal of making available to each irrigable acre within the district the quantity of water to which it is entitled. This is subject to the option of refusing to deliver water to parties who fail to pay their share of operation, maintenance, or construction repayment assessments.

In addition to constraints on the districts by state laws or by contracts, the board of directors of each district is constrained by the by-laws which govern their allocation and transfer of water to the individual user. The latitude and variation necessary in contract requirements is reflected in the district by-laws.

Drainage districts may be created under Section 85.06.010 if five or more landowners within a county desire such an organization. Drainage districts have the power of eminent domain (W.R.C. §85.06.070), and the express power to effectuate improvements in their drainage system (W.R.C. §85.06.390). Enforcement of these powers is provided for in Section 85.06.400 which allows suit in a superior court to compel the performance of duties by the issuance of mandatory injunctions.

Improvement districts (W.R.C. §85.08.010 to 85.08.900) may be created to construct improvements for the drainage, sewage, or protection from overflow of any land upon the petition of four or more landowners (W.R.C. §85.08.020 and 85.08.040). Improvement districts are also given the power of eminent domain (W.R.C. §85.08.190).

16.4 POLLUTION CONTROL

16.4.1 Water Quality

The responsibility for water quality control is also a responsibility of the Department of Ecology (W.R.S. §43.21 A.020 and 43.21 A.060). The Director is authorized to promulgate rules and regulations pertaining to the quality of waters of the state (W.R.C.§ 90.48.035). The Water Pollution Control Act prohibits the discharge of any matter into the water of the state which will result in pollution (W.R.C. §90.48.080). All plans and specifications for the construction of new sewer systems or the extension of existing systems must be approved by the Director (W.R.C. §90.48.110).

Any person conducting a commercial or industrial operation which results in the disposal of waste into the waters of the state must obtain a permit for such a discharge (W.R.C. §90.48.160). This requirement extends to counties, municipalities, or public corporations operating domestic sewage treatment facilities (W.R.C. §90.48.162). Such permits are initiated by formal application. Provision is made for notice and public hearing before a permit request is acted upon (W.R.C. §90.48.170). The Director is to issue a permit unless he finds that the proposed discharge will pollute the waters of the state in violation of public policy (W.R.C. §90.48.180). The public policy of the state as defined by the Act is:

> To maintain the highest possible standards to insure the purity of all waters of the state consistent with public health and public enjoyment thereof; the propagation and protection of all wildlife, birds, game, fish and other aquatic life; and the industrial development of the state, and to that end require the use of all known and reasonable methods by industries and others to prevent and control the pollution of waters of the state of Washington (W.R.C. §90.48.010).

Provision is made for modification of a permit if conditions change (W.R.C. §90.48.195). A permit may be terminated if it is determined that there was a misrepresentation in obtaining it, a violation of the conditions in the permit, or a material change in the waste being disposed of (W.R.C. §90.48.190).

In addition, there is authority for the Department of Ecology to establish water drainage of water pollution within such basins (W.R.C. §90.48.270). These plans cannot be adopted until a public hearing has been conducted. Once adopted, however, they must be complied with (W.R.C. §90.48.280).

Persons aggrieved by a decision of the Director may appeal to the courts (W.R.C. §90.48.145). Persons who violate the Water Pollution Control Act or any final order of the Director are liable in damages for the injury or death of fish, animal, or vegetation caused (W.R.C. §90.48.142).

Though the above provisions appear to show a concern for water quality in the state of Washington, there are few decisions dealing with the quality element of a water right--if, indeed, such an element exists.

There is a difference of opinion among individuals in Washington as to whether a water quality right exists. One individual stated that there was no quality element to be found in a water right in Washington (personal interview with Ralph Johnson, College of Law, University of Washington, Seattle, Washington, March 20, 1975). It was the opinion of this person that the debris cases found were no authority for improving a water quality element.

On the other hand, another individual (personal interview with Charles Roe, Senior Assistant Attorney General, State of Washington, Dept. of Ecology, Olympia, Washington, March 25, 1975) was equally sure that a quality element existed in Washington as part of a water right. To support this opinion, a case was cited (*Natches and Cowche Ditch Co. v. Weikel*, 87 Wash.) which dealt with a complaint by a group of irrigators concerning siltation of their irrigation works. The Washington Supreme Court refused to grant relief to the group because the pollution complained of *did not interfere with the existing use*. The interference was nonpoint in the sense that the siltation could not be traced to a single identifiable area. The court, however, was careful to point out that interference with a water right by pollution was a matter to be decided on a case-by-case basis. From this, it can be argued that a water quality element does exist in Washington as part of a water right.

A distinction between "debris cases" and water quality cases does not make sense to this writer. Pollution is simply the addition of foreign matter into water. Worrying about the size of the matter makes little sense. In explanation, irrigation may be hindered by blockage of a ditch by silt. It may also be hindered by blockage of the water to absorption by the roots by too much salt. But, the key is that the water is being stopped from getting to the crop. The size or type of blockage seems too fine a hair to split.

Moreover, if there is no quality element to be concerned with, then the Washington legislature has labored mightily to speak to, protect and discuss something which does not exist.

The Environmental Policy Act of 1971 defines the policy of the state as being future-oriented. This Act considers the responsibilities of each generation as a trustee of the environment for succeeding generations (W.R.S.§43.21 C. 020). It seeks to attain the widest range of beneficial uses of the environment possible without degradation and to preserve important historic, cultural and natural benefits. It is also aimed at achieving a balance between population and resource use which will permit high standards of living in a wide sharing of life's amenities (Id., §2(f)). The legislature has also recognized a fundamental, inalienable right to a healthful environment and the responsibility of each individual to contribute to the preservation and enhancement of that environment (Id., (3)).

The Act further provides that the policies of state agencies and local governments are to reflect state policies and guidelines. It establishes procedures which are to be followed, in a systematic and interdisciplinary approach, with respect to planning and decision-making regarding matters which have an impact on the environment (W.R.S. §43.21 C.030).

To insure that the policy of the state will be carried out, the Department of Ecology was created in 1970. This Department replaced the Department of Water Resources, the Water Resources Advisory Council, the Water Pollution Control Commission, and the Air Pollution Control Board. All of the powers, duties and responsibilities of these former agencies regarding water right administration, air and water quality control are vested with the new Department. Washington appears to have recognized one of the critical problems of many western states by consolidating the responsibilities and functions of many different agencies under one "umbrella" agency.

In an action for damages for the pollution of a stream, all those who contributed to the common injury may be joined as defendants, so the several liabilities of such tort feasors can be determined in one action and the extent of each person's liability may be more accurately determined (*Snavely v. City of Goldendale*, 10 Wash. 2d 453, 117 P.23 22).

In *Tyler v. Van Aelst* (9 Wash. App. 441, 512 P.2d 760, 1973), the Washington appellate court held that the defendant's conduct in distributing the creek bottom, muddying the waters was negligent but the plaintiff's were contributory negligent by improperly screening their water system (*Tyler v. Van Aelst*, loc. cit.).

Where the defendants, through logging operations, permanently polluted a stream in which plaintiffs had water rights, and from which they took water for domestic use by means of a community water system, plaintiffs were entitled to damages for permanent depreciation in value of their properties and for personal discomfort and annoyance caused by pollution of the water (*Drake v. Smith*, loc. cit.).

REFERENCES

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APPENDIX 1 REPORT 16

W.R.C. §90.14.140 "Sufficient cause" for nonuse defined -- Rights Exempted

For the purposes of this chapter, "sufficient cause" shall be defined as the nonuse of all or a portion of the water by the owner of a water right for a period of five or more consecutive years where such nonuse occurs as a result of:

(1) Drought, or other unavailability of water;

(2) Active service in the armed forces of the United States during a military crisis;

(3) Nonvoluntary service in the armed forces of the United States;

(4) The operation of legal proceedings;

(5) Federal laws imposing land or water use restrictions or acreage limitations, or production quotas.

Notwithstanding any other provisions of this Act, there shall be no relinquishment of any water right:

(1) If such right is claimed for power development purposes under W.R.C.§90.16 and annual license fees are paid in accordance with W.R.C. §90.16; or

(2) If such right is used for a standby or reserve water supply to be used in time of drought or other low flow period so long as withdrawal or diversion facilities are maintained in good operating condition for the use of such reserve or standby water supply; or

(3) If such right is claimed for a determined future development to take place either within fifteen years of the effective date of this Act, or the most recent beneficial use of the water right, whichever date is later; or

(4) If such right is claimed for municipal water supply purposes under

(5) If such waters are not subject to appropriation under the applicable provisions of W.R.C.§90.40.030 as now or hereafter amended.

APPENDIX A REPORT 17

WYOMING

17.1 HISTORICAL BACKGROUND

Wyoming is a semi-arid, Rocky Mountain state of 97,914 square miles receiving an annual precipitation ranging from five inches in the Red Desert to 45 inches in the Snowy Range. Average annual precipitation is ten to fifteen inches. The State is in the unique position of being at the headwaters of four major drainage basins. Two-thirds of the state is east of the Continental Divide and drains into the Missouri River Basin, principally through the Big Horn, Powder and North Platte Rivers. The remaining one-third of the State drains into the Columbia River Basin through the Snake River, Colorado River Basin through the Green River and Great Basin through the Bear River. (See Figure 1, Wyoming Nat'l. Resources, 1967; Wyoming Framework Water Plan, 1973.)

Approximately 2.6 million acre-feet are presently depleted from a total stream flow of 17.3 million acre-feet, leaving 14.7 million acre-feet to flow into neighboring states (Wyo. Framework Water Plan, 1973, p. 21). Consumptive use by agriculture is the highest of all uses, amounting to 82% of stream depletions, and 62% of ground water depletions (Ibid., p. 31 and p. 49) on the approximately 1.8 million irrigated acres (Irrigation Survey, 1974). There is an additional 1.5 million acres in the state with valid water rights but not presently irrigated. These "paper water rights" came into existence partly through the lack of accurate land and flow measurements early in Wyoming's agricultural development and water right filings. Irrigation history goes back to the 1850's around Fort Bridger, with the first recorded filing on 302 acres in 1862 (Wyoming's Nat'l Resources, 1967, p. 34-35).

Ground water use is still in its infancy, with only 216,000 acre-feet per year being pumped for all uses. It is interesting to note a conclusion by the drafters of the Framework Water Plan, that how much ground water will eventually be recovered will depend upon economics, water quality, geohydrology, and legal constraints, with the latter having "the greatest influence on the ultimate recovery" (Wyo. Framework Water Plan, 1973, p. 45).

From its very beginning, Wyoming has been a prior appropriation doctrine state that has had a significant influence upon the majority of western states in the area of water administration. In 1869, the Wyoming Territorial Legislature recognized the right to appropriate water (Wyo. Laws 1869, ch. 8, secs. 28, 29, ch. 22, secs. 15 to 18). In Frank v. Hicks (4 Wyo. 502, 35 P. 475, 1894), and Moyer v. Preston (6 Wyo. 308, 44 P. 845, 1896), the Wyoming Supreme Court expressly rejected the riparian concept of water rights and stated that the appropriation doctrine was more suitable to the area.

In 1886, the Wyoming Territorial Legislature enacted legislation which required an appropriator to file a statement in the county records, to begin construction within 60 days after the date of filing and to prosecute the work diligently until it is complete (Wyo. Laws 1886, ch. 61). In 1888, this law was amended to require the county filing to be made within 90 days after the commencement of construction (Wyo. Laws 1888, ch. 55).

The basis for Wyoming's current system of water allocation and administration is found in Wyoming's Constitution, which was adopted in 1890. The constitution states that "the water of all natural streams, springs, lakes or other collections of still water, within the boundaries of the state, are thereby declared to be the property of the state" (Wyoming Constitution, Article VIII, section 1). These enactments provided for the earliest integrated administrative-judicial procedures under which the administrative body made a determination of all relative rights on a stream (Wyo. Laws 1890-91, ch. 8).[1] This determination was final unless appealed to the courts. It was this system that impacted many western states.

In 1885, the Territorial Legislature created the Office of Territorial Engineer, which gave him general supervision over division and diversion of stream waters and over water commissioners (2nd Annual Report of the Territorial Engineer, 1890, p. 14). Three years later, Dr. Elwood Mead became Wyoming's first Territorial Engineer. He brought with him first-hand and often frustrating experience as Assistant State Engineer of Colorado during the initiation of that state's promising efforts in state water rights administration. Under his direction, the provisions on water contained in the 1890 Constitution were formulated and adopted. In brief, the system contains all four functions: (1) allocation and (2) distribution of water, and (3) administration and (4) adjudication of water rights within the jurisdiction of an administrative body. Thus a simple and functional system was created to grant "permits" to water right applicants upon approval of the State Engineer and his four division engineers sitting as the Board of Control in a quasi-judicial proceeding. This differed from Colorado's system by placing the administrative functions prior to the judicial role, leaving the courts to review the quasi-judicial decisions of the Board.

Colorado had adopted a system (which still remains unchanged to this date with the exception of placing the judicial activities for water under special water courts since 1969) in which water rights are adjudicated by courts and administered by the State Engineer. Subsequently, 15 of the 17 Western states adopted modified versions of Wyoming's system. In 1973, Montana created a centralized system of water administration similar to the Wyoming pattern.[2]

Numerous changes and enactments have occurred since the basic code of 1890, among which the following are important. In 1909, the "no-change" appurtenancy doctrine, tying water rights to specific lands, was added to cure the evils of speculation (Wyo. S.L. 1909, chap. 68 § 1). Within 50 years, 10 exceptions to this statute have developed (see Trelease, 1960).

In 1947, the basic ground water act for Wyoming was adopted and has been subsequently amended several times (W.S.A. 41-121 to 147). The Wyoming Water Conservancy Act was enacted in 1957 (W.S.A. § 41-77 to 117) to enable multiple-purpose water resources development (Brosz, 1970). In 1967, the State Engineer was made "responsible for coordination of Wyoming's water and related land resources" (W.S.L. 1967, ch. 138) and to plan for the development of water allocated to Wyoming under the Yellowstone River Compact, Colorado River Compact and Upper Colorado River Compact (W.S.L. 1967, ch. 137).

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[1] See W.R.S. § 41-165 to 231.

[2] For an interesting statement of the background and development of water administration in the West, see Waters & Water Rights, Vol. I, section 23, ed. by R. E. Clark, Allen Smith Co., 1967.

During the past decade, numerous amendments and additions to the State's water laws have been designed to protect existing rights that are being properly used. In 1974, additional criteria for transferring a water right were added to the law, which is designed to protect vested water rights, but also makes transfers more difficult (W.S.A. §41-4.1). The five-year automatic abandonment statute for nonuse was modified in 1977 to enable water right holders of a reservoir permit to apply to the State Board of Control for an extension of not more than five years (W.S.A. §41-47.1).

17.2 SUBSTANTIVE WATER LAW

17.2.1 Property Right in Water

The Wyoming Constitution provides that "the water of all natural streams, springs, lakes, or other collections of still water, within the boundaries of the state are thereby declared to be the property of the state" (Wyoming Constitution, Article VIII, Section 1). In Lake DeSmet Res. Co. v. Kaufman (75 Wyo. 87, 292 P.2d 482), and Hunziker v. Knowlton (78. Wyo. 241, 322 P.2d 620, 1955), the Wyoming Supreme Court stated that water owned by the State is held in trust for the use of its people under public control exercised in the public interest.

Water flowing in a natural stream is not the subject of private ownership. Private rights that attach thereto are strictly usufructuary rights to take the water from the stream into physical possession for a beneficial use. Thus, private rights of ownership do not attach to the corpus of the water so long as it remains in the stream in its natural state (Wyoming Hereford Ranch v. Hammond Packing Co., 33 Wyo. 14, 236 P. 764, 1925).

The basis of all water uses in Wyoming are appropriative, which is a usufructuary right limited to a beneficial use (W.S.A. §41-2). The right to use water is a valuable property right but is subject to certain limitations on the manner of use and transfer, which will be discussed below. In Hughes v. Lincoln Land Co. (27 F. Supp. 972, D. Wyo., 1939), a federal district court in Wyoming stated that a water right is a property right which cannot be abridged without an infringement upon the owner's constitutional rights. This right is a real property right, subject to ownership and disposition by him as in the case of other kinds of real property (Merrill v. Bishop, 74 Wyo. 298, 287 P.2d 620, 1955). The title which the appropriator holds is the right to divert and use a specified amount of water for a beneficial purpose and not a right to the corpus of the water (Farm Investment Co v. Carter, 9 Wyo. 110, 61 P. 258, 1900). The water diverted does become his personal property while under his control, for the use(s) that it was appropriated.

The appropriator is entitled to a continuing use of such waters that have been appropriated, but not beyond that reasonably required and actually used (Arizona v. California, 56 S. Ct. 848, 298 U.S. 558). Therefore, a prior appropriator can receive his entire supply before junior rights will be satisfied, but the prior appropriator cannot interfere with junior rights if he is receiving the quantity and quality of water to which he is entitled (Mitchell Irr. Dist. v. Whiting, 59 Wyo. 52, 136 P.2d 502, 1943).

17.2.2 Acquisition of Right

General--

A water right can be acquired only by filing an application for a permit to make the appropriation with the State Engineer (W.S.A. § 41-201).[3] Every application must have a map or plat which depicts the proposed works. Section 41-201 (W.S.A.) allows any person, association, or corporation to initiate a water right. Municipal corporations have the same rights by appropriation and acquisition of existing rights may also be accomplished by the power of eminent domain (Wyo. Const., Article XIII, section 5). In Sherck v. Nichols (55 Wyo. 4, 95 P.2d 74, 1939), the court held that an appropriation must be for a beneficial use, but it need not be for the benefit of the applicant himself. The extent of the right is limited by the beneficial use requirement and statutory duty of water, discussed in section 17.2.4 below.

The State Engineer must approve all applications which are made in the proper form and which contemplate the application of the water to a beneficial use and will not impair existing rights (W.S.A. § 41-203). The State Engineer must reject any application if the proposed use will conflict with existing rights, will be detrimental to the public interest, or if there is no unappropriated water available (W.S.A. § 41-203).

If an application is approved, actual construction must begin within one year and completion within five years. Completion in less than five years may be required by the State Engineer or if good cause is shown, an extension may be obtained (W.S.A. § 41-206). Once construction is complete and the water has been placed to a beneficial use, the applicant must submit proof of the appropriation to the division superintendent (W.S.A. §41-211). Notice of the proof is published and if there is any objection a hearing will be held and the evidence transmitted to the Board of Control (W.S.A. §41-203). Testimony and evidence received during the hearing will be sent to the Board of Control (W.S.A. § 41-179). If the Board is satisfied that there are no conflicts and the appropriation was completed in accordance with the permit, then they will issue a certificate of appropriation which is recorded with the county clerk. Decisions of the Board may be appealed to the district court (W.S.A. §41-216). The certificate of appropriation is then recorded with the county clerk where the land upon which the water is used is situated and this constitutes evidence of an adjudicated right to use water (W.S.A. §41-21). Section 41-213 allows for the correction of any errors in permits or certificates, provided that the total area of lands does not exceed the area which was described in the original permit (W.S.A. §41-213). The priority of the right dates from the time the application was filed (W.S.A. §41-212). Any person aggrieved by the endorsement of the State Engineer may within 60 days appeal the endorsement to the Board of Control whose decisions can be applied to the district court (W.S.A. § 41-216).

Priority of application for beneficial uses gives the better right and no appropriation will be denied except when demanded by the public interest (Wyo. Const. Article VIII section 3). Control in water is vested in the state and in providing for its use the State must guard all of the various interests involved (Wyo. Const. Article I section 31).

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[3] See Regulations and Instructions, Part I, Surface Water, from the State Engineer's Office, Revised Jan. 1974.

Ground Water--
Underground water is that water under the surface of the land or under the bed of any stream, lake, reservoir, or other body of surface water (W.S.A. §41-121). The State Engineer prescribes rules and regulations to administer the ground water act and can require reports from well drillers and water users. The State Engineer can also establish standards for well construction, the prevention of waste or pollution of ground water and can initiate action to secure compliance. If waste of water is occurring or may occur, then a critical ground water area may be designated (W.S.A. §41-129).

A ground water appropriator may change the location of his well without losing his priority. If the right has been adjudicated, then approval of the Board of Control must be had before the effectuation of a change and if the right is nonadjudicated, then approval must be obtained from the State Engineer (W.S.A. §41-134). Ground water rights may be adjudicated as other water rights (W.S.A. §41-212.1).

Acquisition of a right to appropriate ground water must be through the filing of an application for a permit with the State Engineer. The application will be granted in a noncontrol area if the use is beneficial, in the public interest and the means of diversion adequate (W.S.A. §41-138). The Engineer will approve applications in control areas if there is unappropriated water available, the means of diversion is adequate and if the use would not prove to be detrimental to the public interest (W.S.A. §41-140).

Prescriptive Water Rights--
In Campbell v. Wyoming Development Co. (55 Wyo. 347, 100 P.2d 124, 1940), the Wyoming Supreme Court stated that there was some doubt whether a prescriptive right could be established in Wyoming because of legislation which required that all rights must be initiated by the filing of an application with the State Engineer.

Preferences--
Wyoming recognizes preferred uses which include rights for domestic uses, transportation, steam power plants and industrial uses. Existing rights which are not preferred may be condemned to supply water for preferred uses (W.S.A. §41-3). Preferred uses are ordered in the following manner. First--water for drinking purposes for both man and beast; second--water for municipal purposes; third--water for the use of steam engines and for general railway use, water for culinary, laundry, bathing, refrigerating (including the manufacture of ice), for steam and hot water heating plants and steam power plants; and fourth--industrial purposes except that no right of condemnation extends to uses for industrial or power plant purposes (W.S.A. §41-3). Provision is made for securing approval of a change if the new use will be a preferred use, after public notice, inspection and hearings (W.S.A. §41-4). Ground water is subject to the same preferences as fround in Section 41-3, except that domestic use and use for stock have the highest priority.

This statutory ordering of types of uses into a preferred status does not affect the diversion and distribution of water according to priority. Regardless of their preferential status, water will be diverted according to the priority of the right. The preference is used a) as a criterion in deciding the allocation of scarce water supplies between different competing uses, and b) to enable the preferred user to condemn and compensate nonpreferred water rights (W.S.A. §41-3).

17.2.3 Adjudicating Water Rights

Wyoming has two statutory adjudication procedures to define the extent of existing rights for a water source (W.S.A. §41-165 to 192)--stream-by-stream and continuous adjudication. The Board of Control must decide the order streams are to be adjudicated in (W.S.A. §41-165). It then must post notice of the date when the State Engineer will begin a measurement of the stream and ditches (W.S.A. §41-166). The division superintendent must mail notice to each party who has a recorded claim to the waters of the stream. The claim must state the date when the State Engineer will begin his examination of the stream and ditches and the date when testimony will be taken and closed (W.S.A. §41-167). Notice by registered mail was held to be sufficient to meet due process requirements in Farm Investment Co. v. Carpenter (9 Wyo. 110, 61 P.258, 1900). Continuous adjudications are made at the request of the water right holder.

Users must file a verified claim which details the nature of the right claimed. If the user fails to submit a claim, then the claimant will be barred from asserting his rights.

In Laramie Irrigation and Power Co. v. Grant (44 Wyo. 392, 13 P.2d 235, 1932), the Wyoming Supreme Court held that Board decisions adjudicating priority is prima facie correct. The adjudication is final and binding on all users who joined in or were made parties to the proceeding and awards cannot be enlarged (Campbell v. Wyoming Development Co., 55 Wyo. 347, 100 P.2d 124, 102 P.2d 745, 1940). But, Anita Ditch Co. v. Turner (389 P.2d 1018, 1964) held that the Board cannot adjudicate the rights of persons who are not parties to the proceedings. Wyoming courts have jurisdiction to quiet title to water rights and provide equitable or legal relief between users (Campbell v. Wyoming Development Co., 55 Wyo. 347, 100 P.2d 124, 102 P.2d 745, 1940).

17.2.4 Conditions of Use

Beneficial Use--
Beneficial use is the basis, the measure and the limit of the right to use water (W.S.A. § 41-2). Wyoming statutes provide no firm definition for beneficial use. The use of water is limited not only by the amount which has been specifically appropriated but also by the amount which can be used beneficially. Priority of appropriation for beneficial use gives the better right (Wyo. Const. Art. VIII, section 3).

An appropriation which is not useful is of no effect under Wyoming law (Ide v. United States, 263 U.S. 497, 1924). In Quinn v. John Whitaker Ranch Co. (54 Wyo. 367, 92 P.2d 568, 1939) the Wyoming Supreme Court stated that a water user is limited to a quantity which is reasonably necessary for a beneficial purpose and therefore the user of a direct flow cannot divert water in excess of beneficial requirements and an owner of a reservoir cannot store more water than can be beneficially used (Kearney Lake, Land and Reservoir Co. v. Lake DeSmet Res. Co., 475 P.2d 548, 1970).

Duty of Water--
Wyoming applies a dual criteria to determining the quantity of water to be allocated under a direct flow water right for irrigation purposes. The first is that the amount cannot exceed that which can be beneficially used. The second is a statutory duty of

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*See Regulations and Instructions, Part II, Ground Water and Part III, Water Well Minimum Construction Standards, from the State Engineer's Office, Revised Jan. 1974.

water criteria for direct use of the natural unstored flow. The duty of water is one cubic foot per second for each 70 acres of land (W.S.A. § 41-181). This duty does not pertain to stored water.

Surplus Water--
Section 41-181 further provides that, where there is excess water in a stream it can be divided among the appropriators of that stream in proportion to the acreage covered by their permits provided it is beneficially used. This excess water, termed "surplus water" throughout the rest of the section prescribing the extent and manner of allocation, is limited to an additional one cubic foot per second per 70 acres for all pre-March 1, 1945, adjudicated water rights (W.S.A. § 41-182 to 187). The priority date of surplus water rights is March 1, 1945, and they are senior to any water rights acquired after March 1, 1945.

Recently the Wyoming Supreme Court upheld the state's water surplus law (W.S.A. § 41-181 through 41-188) in Budd v. Bishop (543 P.2d 1368, Wyo. 1975).

Rotation of Water Use--
Section 41-170 allows users to rotate the use of water if it can be done without injury to other appropriators to effect a more economical use of available water.

Waste--
The waste of water can be considered the opposite of using the water beneficially. Waste water is that water which has been used by a prior user which has left his lands and goes upon the lands of another, or otherwise becomes available for use by another, without returning to a natural watercourse.

In Binning v. Miller (55 Wyo. 451, 102 P.2d 54, 1940), the court held that waste and seepage water is private water as long as it is on the lands of the user who originates it. A user cannot be compelled to maintain a wasteful practice but when waste or seepage water has escaped from the original appropriator, it can be appropriated by someone else (Bower v. Big Horn Canal Association, 77 Wyo. 80, 307 P.2d 593, 1957). In Quinn v. John Whitaker Ranch Co. (54 Wyo. 367, 92 P.2d 568, 1939), the court ruled that in the case of territorial decreed rights the use of water in excess of the amount prescribed by Section 41-181, the duty of water limitations, is not necessarily a waste of water.

17.2.5 Manner in Which Rights May Be Adversely Affected

Abandonment & Forfeiture--
Wyoming, like so many other Western States, commingles the use of the terms abandonment and forfeiture in their statutes. Normally, forfeiture refers to the statutory provision providing for automatic loss of water rights after a term of nonuse, with or without prior notice of forfeiture action by the state agency to the water right holder. An abandonment requires an intent to give up or forsake the right along with the nonuse of water. If the intent does not exist, there can be no abandonment (Ward v. Yoder, 355 P.2d 371, 1960). Abandonments are not favored and the burden of proof rests upon the party who asserts that an abandonment has occurred (Laramie Rivers Co. v. LeVasseur, 65 Wyo. 414, 202 P.2d 680, 1949).

W.S.A. Sections 41-47.1 provides that where the holder of an appropriation of water fails either intentionally or unintentionally to use the water for a beneficial purpose for five successive years, the right and all its privileges are considered abandoned and forfeited. However, a right cannot be lost by nonuse if the nonuse is caused by factors beyond the appropriator's control (Yentzer v. Hemenway, 440 P.2d 7, 1968). The right to cancel the whole appropriation also carries with it the power to cancel a portion of the right (Yentzer v. Hemenway, 440 P.2d 7, 1968). The owner still retains title to his right until a forfeiture has been formally declared (Horse Creek Conservation Dist. v. Lincoln Land Co., 54 Wyo. 320, 92 P.2d 572, 1939). In Ramsey v. Gottsche (51 Wyo. 516, 69 P.2d 535, 1937), the court stated that forfeitures are not favored and should only be declared upon reasonably clear and satisfactory evidence. These last two cases seem inconsistent with the language of the statute, particularly since the section was amended in 1977, retaining the strong wording that who fails to use his water rights for 5 successive years "is considered as having abandoned the water right and shall forfeit all water rights and privileges appurtenant thereto" (S.L. 1977, ch. 126, Act. no. 7).

The 1977 amendment provides an exception to the abandonment rule. Water right holders with an appropriation for diversion and storage of water in reservoir may apply to the Board of Control for an extension of 5 years to put the water to beneficial use (Ibid.). The applicant must show he exercised due diligence, but in spite of this, reasonable causes prevented him from putting the water to use.

Forfeiture under the statute can be initiated by the affected water user (W.S.A. § 41-47.1(a)) or by the State Engineer (W.S.A. § 41-47.2). The Board of Control has original jurisdiction in water right abandonment proceedings (W.S.A. § 41-47.2). An individual must submit his claim that certain water rights should be abandoned to the Board. The Board may refer it to the division superintendent, upon which water users whose rights are claimed to be abandoned are notified that a hearing will be held on the matter. After the hearing the Board shall determine the status of the rights and notify the parties by certified mail. Contestants to the Board's decision can appeal to the courts for redress. Similar action is taken when the initiation of abandonment is done by the State Engineer, except that he cannot participate as a voting member of the Board in deciding the matter.

Condemnation--
Section 41-3 allows the condemnation of existing rights which are not preferred to supply preferred uses. Private property cannot be taken without just compensation (Wyo. Const. Art. I sections 32 and 33). Municipal corporations have the right of eminent domain to acquire water from prior appropriators upon the payment of just compensation (Wyo. Const. Art. XIII, section 5).

Enforcement of Beneficial Use on Waste Concepts--
A water use is limited to that quantity which is reasonably necessary for a beneficial use (Quinn v. John Whitaker Ranch Co., 54 Wyo. 367, 92 P.2d 568, 1939). While waste water has not been statutorily defined, it can be defined as that water which is now lost under current systems and practices but which might be saved (Dewsnup, 1971). Wyoming statutes recognize the existence of return flows and waste waters by giving the division superintendent power to order the construction of ditches to carry return waters to the main stream (W.S.A. § 41-58). Waste waters have been held to be private water in Binning v. Miller (55 Wyo. 451, 102 P.2d 54, 1940) as long as it is on the lands of the user who originates it. A user cannot

be compelled to maintain a wasteful practice and once this waste water has escaped from the original appropriator it may be appropriated by someone else (Bower v. Big Horn. Canal Ass'n., 77 Wyo. 80, 307 P.2d 593, 1957).

17.2.6 Legal Incentives and Disincentives for More Efficient Water Use Practices

Irrigation Return Flow--
Irrigation return flows occur from deep percolation caused by the excessive or over-application of water to the land, seepage from conveyance systems and tail water runoff. Waste and seepage waters which return to the stream are considered to be return flows, becoming a part of the watercourse and subject to reappropriation (Binning v. Miller, 55 Wyo. 451, 102 P.2d 54, 1940). Division superintendents are given the authority to order the construction of suitable ditches to carry return waters from any ditch or land to the main stream (W.S.A. §41-58).

In Wyoming Hereford Ranch v. Hammond Packing Co. (33 Wyo. 14, 236 P. 764, 1925), the court held that a city's return flow from its sewage treatment works was not encompassed within the city's right and could not be recaptured by the city to the detriment of a downstream appropriator. However, as conversely held in Binning v. Miller (55 Wyo. 451, 102 P.2d 54,1940), a water user could recapture waste water on his land and reuse it on the same land.

Provisions for Transfer of Water Rights and Diversions--
Wyoming is one of four Western states that still has a strict provision prohibiting transfer of direct flow rights. A statute, enacted in 1909, provides that a water right for the direct use of the natural unstored flow of any stream cannot be detached from the land, place, or purpose for which it was acquired, except for changes to preferred uses (W.S.A. § 41-2). However, this strict rule has been eroded by numerous exceptions beginning with other legislation enacted in the same year that the appurtenancy principle tying water to land was adopted.[5] Up to 1960, 10 exceptions had been identified, which for all practical purposes allow a water right in Wyoming to be transferred for good cause and with approval of the Board of Control. The exceptions are transfers for (1) domestic and transportation purposes, (2) pre-1909 water rights, (3) rotation in use, (4) amendments to permits (unadjudicated water rights), (5) use of water from another source when done by agreement between organizations, (6) use of water on other lands when lands to which a water right pertains become submerged lands within a reclamation project, (7) steam power plants, (8) industrial uses, (9) highway purposes and (10) water stored in reservoirs (Trelease, 1960). In 1973, the law was further amended to allow a holder or owner of an adjudicated direct flow water right to store the water in a reservoir (S.L. 1973, ch. 203, § 1) so long as no other Wyoming appropriator or user is injured or affected by the storage of these waters (S.L. 1975, ch. 177, § 1). The State Engineer can prescribe rules and regulations to govern the process.

A change in use, or a change in the place of use will be allowed if that quantity of water which is transferred does not exceed the amount of water historically diverted under the existing use, nor increase the historic amount consumptively used, nor decrease the historic amount of return flow, nor injure other existing lawful appropriators in any manner (W.S.A. § 41-4.1).

The Board of Control must consider all facts which it believes pertinent to the transfer (W.S.A. § 41-4.1). Statutorily, the Board must consider:

(i) The economic loss to the community and the state if the use from which the right is transferred is discontinued;
(ii) The extent to which such economic loss will be affected by the new use;
(iii) Whether other sources of water are available for the new use (W.S.A. § 41.4.1).

Owners of rights to the use of any natural stream, spring, lake or other collection of stillwater where the source is insufficient to satisfy the rights or a better conservation and utilization of the water can be made, are authorized to enter into an agreement for use of water from another source (W.S.A. § 41-5). An exchange can also be made by the owner of stored water for the direct flow of a stream if it can be made without injury to others (W.S.A. § 41-42).

In Bard Ranch, Inc. v. Weber (538 P.2d 24, 1975 Wyo.), the Wyoming Supreme Court held that where permission to change a point of diversion downstream on a gaining stream which was subject to the condition that no injury to other appropriators would occur, it is the duty of the other appropriators to demonstrate injury by an appropriate proceeding before coming to court.

17.2.7 Waste Water Disposal and Drainage

Rain water, snow, and other forms of moisture which arise upon the soil in the form of diffused surface waters can be collected and used by the landowner (State v. Hiber, 48 Wyo. 172, 44 P.2d 1005, 1935). However, once the water enters a watercourse, there are two issues. The first pertains to the right to use the water, the second to the right to protect downstream lands from the harm it would cause. The first issue has been the subject of the preceding portion of this report, i.e., the nature of acquiring a right under the appropriation doctrine in Wyoming to use the water.

As to the second issue, it cannot be said for certain which rule of drainage Wyoming follows. In 1904, the Supreme Court seemed to follow the natural flow rule (Ladd v. Redle, 12 Wyo. 362, 75 P. 691, 1904). The court said a person could protect his lands by constructing embankments, but could not cast the water on the lands of others, which is the common enemy rule. Thus, lands located above this landowner would have a right of servitude across his land.

But in 1960, the court discussed the several rules and concluded it was not necessary to adopt any specific rule (Lee v. Brown, 357 P.2d 1106, 1960). Beck and Ayde conclude that since this discussion was based upon the gravity of harm that could occur if any specific rule were followed versus the utility of the parties' activity, that the court would probably adopt the reasonable use test when confronted with the issue (Clark, Vol. 5, p. 577, 1972).

Wyoming statutes provide that reservoir owners are liable for all damages which arise from leakage or overflow of waters or by floods causing breakage of reservoir banks (W.S. 1957, § 41-46). However, in

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[5] For an excellent discussion of the law and its exceptions, see Trelease, F. J., Severance of Water Rights from Wyoming Lands, A report to the Wyoming Legislature Research Committee, Research Report No. 2, Aug. 1960.

Wheatland Irrigation District v. McGuire (537 P.2d 1128, 1974 Wyo.), the Supreme Court of Wyoming held that this statute does not impose absolute liability for damages caused by acts of God or public enemies or malicious acts of third party saboteurs.

17.3 ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS

17.3.1 State Water Agencies

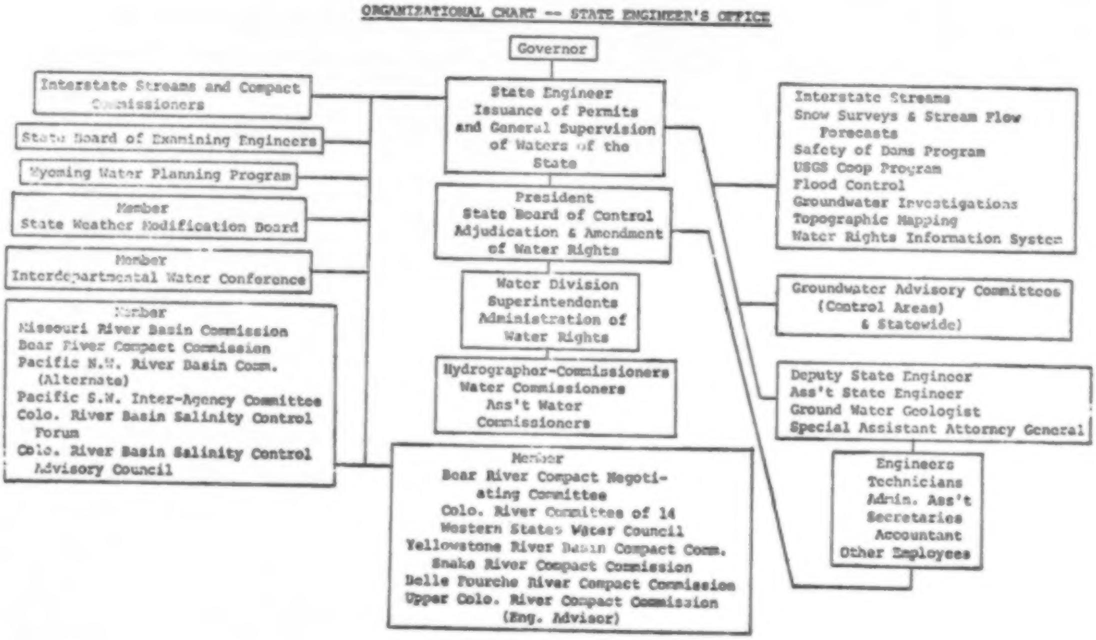
Administration of water rights is vested in the Board of Control and the State Engineer.[6] The Board of Control is made up of the State Engineer and the superintendent of the four water divisions. The Board supervises the appropriation, distribution and division of the waters of the State (Wyo. Const. Art. VIII, section 2). The State Engineer is the president of the Board and must supervise the waters of the State and the officers connected with the distribution of water (Wyo. Const., Art. VIII, section 5). See Figure 1.

The state is divided into four water divisions, each headed by a water superintendent who operates under the control of the State Engineer to regulate the use and storage of water (W.S.A. § 41-54, 55, 57). The superintendents can also require that suitable ditches exist to carry return or waste water back to the main stream (W.S.A. § 41-58).

The four water divisions are divided into water districts that are administered by water commissioners (W.S.A. § 41-62). The commissioners must divide, regulate and control the use of water among the individual users (W.S.A. § 41-63). In order to accomplish this, the commissioner may regulate headgates on ditches and the controlling works of reservoirs (W.S.A. § 41-64). Section 41-70 allows the rotation of water among users to bring about a more economic use of the water. Appeal of the commissioner's decision is made to the division superintendent and then to the State Engineer and finally to the district court (W.S.A. § 41-63). Waters must be distributed in accordance with adjudicated water rights (Quinn v. John Whitaker Ranch Co., 54 Wyo. 367, 92 P.2d 568, 1939), but an adjudication is not essential for a commissioner to act. Therefore, a distribution can be accomplished even though a permit is unperfected as well as with a certificate of appropriation (Laramie Rivers Co. v. LeVasseur, 65 Wyo. 414, 202 P.2d 680, 1949). The commissioner's decision does not constitute an adjudication of the user's rights and is not binding upon the courts (Ryan v. Tutty, 13 Wyo. 122, 78 P. 661, 1904).

In any statutory adjudication of water rights, the State Engineer must prepare a hydrographic survey and

Figure 1--Functional Organization of the Wyoming State Engineer and Related Offices


ORGANIZATIONAL CHART -- STATE ENGINEER'S OFFICE
Governor
Interstate Streams and Compact Commissioners
State Board of Examining Engineers
Wyoming Water Planning Program
Member State Weather Modification Board
Member Interdepartmental Water Conference
Member Missouri River Basin Commission Bear River Compact Commission Pacific N.W. River Basin Comm. (Alternate) Pacific S.W. Inter-Agency Committee Colo. River Basin Salinity Control Forum Colo. River Basin Salinity Control Advisory Council
State Engineer Issuance of Permits and General Supervision of Waters of the State
President State Board of Control Adjudication & Amendment of Water Rights
Water Division Superintendents Administration of Water Rights
Hydrographer-Commissioners Water Commissioners Ass't Water Commissioners
Member Bear River Compact Negotiating Committee Colo. River Committee of 14 Western States Water Council Yellowstone River Basin Compact Comm. Snake River Compact Commission Belle Fourche River Compact Commission Upper Colo. River Compact Commission (Eng. Advisor)
Interstate Streams Snow Surveys & Stream Flow Forecasts Safety of Dams Program USGS Coop Program Flood Control Groundwater Investigations Topographic Mapping Water Rights Information System
Groundwater Advisory Committees (Control Areas) & Statewide)
Deputy State Engineer Ass't State Engineer Ground Water Geologist Special Assistant Attorney General
Engineers Technicians Admin. Ass't Secretaries Accountant Other Employees

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[6] See Regulations and Instructions, Part IV, State Board of Control, from the State Engineer's Office, Revised Jan. 1974. Also, examine Everybody's Guide to Wyoming Water Administration in Hause and Cahill, 1967.

the division superintendent must take the user's testimony (W.S.A. § 41-172-41-180). The Board of Control will then enter its order which determines the various individual rights (W.S.A. § 41-181).

The State Engineer must also coordinate Wyoming water and land resource planning and can enter into agreements with United States agencies in order to accomplish this (W.S.A. § 41-1.6, 41-1.7).

Statutory provision is also made for a Division of Water Development, which is a division within the State Department of Economic Planning and Development and cooperates with the State Engineer to develop a State water plan (W.S.A. § 9.160.31). The division may file applications to reserve water to be used for industrial purposes, contract for furnishing industrial or municipal water and contract with the Federal Government for the construction of water development projects (W.S.A. § 9-160.31). Sections 41-480 to 41-485.1 provide for an interstate stream commission which represents Wyoming's interests whenever the State negotiates with another State for the apportionment of interstate waters.

17.3.2 Judicial Bodies

Decisions of the State Engineer are appealable to the district court (W.S.A. § 41-63). In adjudication of water rights the Board of Control's determination also is appealable to the district court (W.S.A. § 41-193). District court decisions are appealed directly to the Wyoming Supreme Court.

17.3.3 Water Users and Their Organizational Structure

Individuals--
This term contemplates a single or natural person as distinguished from a group or class, partnership, corporation or association (Black's Law Dictionary, 4th Ed.). In providing for the appropriation of waters in the State the purpose is to allow the public to acquire rights to divert and use such waters. Article 13 § 5 of the Wyoming Constitution gives municipal corporations the same right as individuals to acquire rights by appropriation.

Districts--
Districts are corporations with a public purpose. These districts differ from counties and like political units in that they function for profit and are set up for business, not a governmental purpose. Wyoming statutes allow the creation of public districts who have the responsibility to develop and conserve the State's water resources. These districts include drainage districts (W.S.A. § 41-355 to 479), flood control districts (W.S.A. § 41-118 to 120), irrigation districts (W.S.A. § 41-269 to 323.18), public irrigation and power districts (W.S.A. § 41-324 to 354), water conservancy districts (W.S.A. § 41-77 to 117), and water and sewer districts (W.S.A. § 41-479.1 to 41-479.51).

Water conservancy districts are organized to conserve water resources and provide for the greatest beneficial use.[7] The Districts are commanded to benefit irrigated lands by stabilizing the flow of water in streams and increasing flow and return flow to streams (W.S.A. § 41-77e). The policy of the State is set forth in section 41-77 § 1, to control, make use of and apply to beneficial use all unappropriated waters in this state . . . to obtain from water the highest duty for domestic uses and irrigation of lands.

Water commissioners of water districts have the power to divide, regulate and control the use of waters within his district. To effectuate such power the commissioner is given authority to close headgates in order to prevent waste or excess use. Persons aggrieved by a commissioner's decision may appeal to the Division Superintendent, from there to the State Engineer and finally to the district court (W.S.A. § 41-61).

A water commissioner's duties include the command to divide waters, regulate headgates, regulate the controlling works of reservoirs.

Wyoming statutes provide that:

> (a) to bring about a more economical use of the available water supply, it is lawful for water users owning lands to which are attached water rights, to rotate in the use of supply to which they may be collectively entitled, or a single water user, having lands to which water rights of a different priority attach, may in like manner rotate in use, provided that all water rights subject to rotation are in priority. Rotation of water will be allowed only if it can be accomplished without injury to other appropriators.
> (b) Prior to the commencement of any rotation in the use of water pursuant to this section, the owner or owners of the water rights to be rotated shall file a notice of intention to rotate with the appropriate water commissioner, on the form provided for that purpose by the commissioner, and shall obtain the water commissioner's written approval which shall be endorsed on the form.
> (c) Performance of the rotation shall be enforced by the water commissioner in accordance with the terms and conditions included in the form signed and approved by the water commissioner. The state engineer may adopt such rules and regulations as are necessary for him to efficiently administer this section (W.S.A. § 41-70).

Formation of a company to construct ditches to convey waters requires the specification of the stream from which the water is taken, the line of proposed ditches and the use to which the water will be applied (W.S.A. § 17-188).

A mutual water company is a nonprofit corporation that owns diversion or storage works and delivers water at cost to users who own its stock (Trelease, 1957). A water commissioner has the power to divide the water in a ditch among the partners or co-tenants (W.S.A. § 41-64, 41-252).

In Anderson v. Wyoming Development Co. (60 Wyo. 417, 154 P.2d 318, 1944), the Wyoming Supreme Court stated that a company is under no duty to establish a dependable supply or to limit sales of water rights to the amount of land that can be irrigated with its supply. However, in Laramie Rivers Co. v. Watson (69 Wyo. 333, 241 P.2d 1080, 1952), the court protected water right holders in a company by prohibiting the sale of shares of stock where the water was barely sufficient for the needs of present holders.

17.4 POLLUTION CONTROL

The Wyoming Environmental Quality Act (W.S.A. Chapter 9.1, Section 35-502.1 to .53) established the

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[7] See Brosz, Establishing Water Conservancy Districts in Wyoming, 1970.

Department of Environmental Quality, which is composed of two divisions, the Air Quality Division and the Water Quality Division. No person, except with a permit, can discharge any pollutant or wastes into the waters of the state or alter the physical, chemical, radiological, biological or bacteriological properties of any waters of the state (W.S.A. § 35-502.18).

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